

*Final Recommendations* for a

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VOLUNTARY NATIONAL  
ACCREDITATION PROGRAM

for



SUMMARY DOCUMENT  
SEPTEMBER 12, 2006

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of the *Exploring Accreditation* project:

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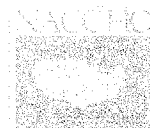


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The time and effort contributed by the Planning Committee has been instrumental  
to this process, and their support is greatly appreciated.

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## EXECUTIVE SUMMARY

Every day in communities and states across the country, public health departments help millions of people lead healthier lives. The *Exploring Accreditation* project has been an opportunity to consider whether and how a voluntary national accreditation program could lead to even better health for their constituencies. The *Exploring Accreditation* Steering Committee and its workgroups developed a draft model for such a program. After receiving extensive and thoughtful comments through presentations, Web-based feedback, and formal surveys, the Steering Committee revised the model. The Steering Committee concluded that it is desirable and feasible to move forward with establishing the recommended model program as it is presented here.

This voluntary national accreditation program should:

- Promote high performance and continuous quality improvement.
- Recognize high performers that meet nationally accepted standards of quality.
- Clarify the public's expectations of state and local health departments.
- Increase the visibility and public awareness of governmental public health, leading to greater public trust, increased health department credibility and accountability, and ultimately a stronger constituency for public health funding and infrastructure.

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*The goal of a voluntary national accreditation program is to improve and protect the health of the public by advancing the quality and performance of state and local public health departments.*

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A full description of the Steering Committee's recommended model follows this brief summary.

### *Governance*

A new non-profit organization should be formed by the Planning Committee organizations to oversee the voluntary accreditation of state, territorial, tribal and local governmental public health departments. The Planning Committee should appoint the initial governing board of the new organization. Under its governing board, the organization would direct the establishment of accreditation standards; develop and manage the accreditation process; and determine whether applicant health departments meet accreditation standards. The organization would maintain the needed administrative and fiscal capacity and would evaluate the effectiveness of the program and its impact on health departments' performance. The governing board and the organization would advocate for available training and technical assistance for public health departments seeking to meet the standards and to develop a culture of continuous quality improvement.

### *Eligible Applicants*

Any governmental entity with primary legal responsibility for public health in a state, territory, tribe, or at the local level would be eligible for accreditation. Eligibility to apply for accreditation would be determined in a flexible manner, given the variety of jurisdictions and governmental organizations responsible for public health.

### *Principles to Guide Standards Development*

Standards should be developed to promote the pursuit of excellence among public health departments, continuous quality improvement, and accountability for the public's health. The process for establishing standards should consider performance improvement experience among state and local public health departments.

The Steering Committee created 11 domains for which state, territorial, tribal and local health departments should be held accountable. Standards should be established for each domain. Measures of compliance may differ but standards should be complementary and mutually reinforcing to promote the shared accountability of public health departments at all levels of government.

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## *Conformity Assessment Process*

Health departments seeking accreditation would undergo an assessment process. It should include a review to determine readiness, a self-assessment, and a site visit, resulting in a recommendation on accreditation status. The final decision on accreditation would be made by the governing board. A public health department would be fully accredited, conditionally accredited, or not accredited. An appeals process would be established to resolve disputes.

## *Financing*

The new organization should seek initial start-up funding from interested grant-makers, government agencies, and organizations of state and local health departments, some of which may be in-kind support. Subsidies for initial operations will be required, but this phase should be funded in part by applicant fees and other revenues. It is important to attract the full spectrum of local and state public health departments to the accreditation program. As the new organization approaches self-sufficiency, subsidies should be directed more toward applicant fees and costs.

## *Incentives*

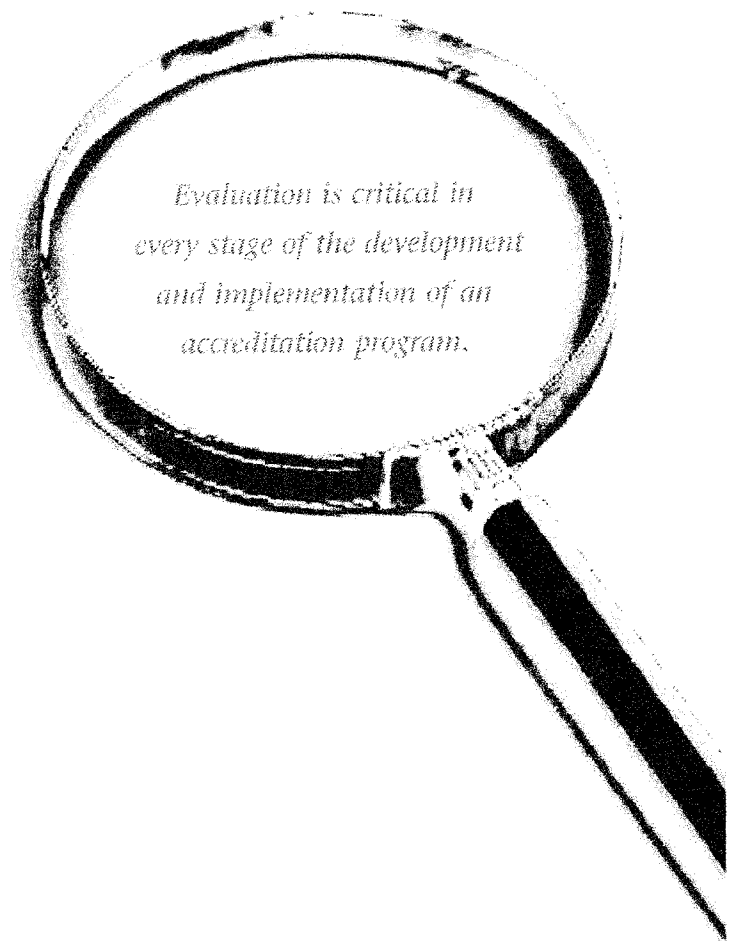
Incentives should be uniformly positive, supporting public health departments in seeking accreditation and achieving high standards. Incentives should support the goal of improving and protecting the health of the public by advancing quality and performance of public health departments. Credibility with governing bodies and the public, as well as access to resources for performance improvement, should encourage participation by health departments.

## *Program Evaluation*

Evaluation is critical in every stage of the development and implementation of an accreditation program. The accrediting entity should encourage research and evaluation to develop the science base for accreditation and systems change in public health.

## *Implementation*

The details of implementation will be developed by the leaders who take on the challenge of developing the new organization. Implementation will be a multi-year process requiring substantial external support in the development years. Implementation should include rigorous evaluation and process improvements in the accreditation program to make it more successful and cost-effective.





## MESSAGE FROM THE STEERING COMMITTEE

The 2003 Institute of Medicine (IOM) report, "The Future of the Public's Health," called for the establishment of a national Steering Committee to examine the benefits of accrediting governmental public health departments. Within its *Futures Initiative*, the Centers for Disease Control and Prevention (CDC) has identified accreditation as a key strategy for strengthening the public health infrastructure. Several states currently manage statewide accreditation or related initiatives for local health departments. Within this context, in 2004, the Robert Wood Johnson Foundation convened public health stakeholders to determine whether a voluntary national accreditation program for state and local public health departments should be explored further. The consensus was to proceed, and the *Exploring Accreditation* project was launched.

The goal of the *Exploring Accreditation* project was to develop recommendations regarding whether it is feasible and desirable to implement a voluntary national accreditation program or some other method for achieving a systematic approach for public health improvement. In order to achieve the goal, we (the Steering Committee) designed a proposed model program and vetted it through public health officials. We also considered a business case for the proposed model. ***In August, we made changes in the proposed model based on the feedback received and concluded that the revised model is feasible and desirable. We recommend moving forward with implementation.***

A full report, which will contain more detail, is under development and will be released in the Fall of 2006. This document summarizes the model program that we recommend for implementation.

We believe that the establishment of a voluntary national accreditation program is desirable for many reasons. Chief among them is the opportunity to advance the quality, accountability and credibility of governmental public health departments, and to do so in a proactive manner. At least 18 states are involved in performance and capacity assessment and improvement efforts, lending excellent experience to the design of a national program. These experiences illustrate the significant

benefits of engaging in accreditation and related efforts — benefits that the national program is designed to achieve (e.g., quality and performance improvement, consistency among public health departments, and recognition of excellence). The public comment solicited from public health practitioners in the field indicated support for a voluntary national program. This program will foster the concept of public health as a system, and promote consistency and high performance nationwide. It also will strengthen the ability to clarify and articulate what public health does, and set reasonable and achievable expectations to this end.

We feel that it is feasible to pursue a voluntary national accreditation program because it is building upon the momentum established by state accreditation and performance improvement programs. By taking advantage of knowledge gained from standards development, performance measurement methods, technical assistance projects and other operational components of state-based programs, this program can be flexible, efficient and nimble. The major factors in starting up the new accreditation body and reaching sustainability include the interest of key funding sources in supporting interactive developmental and initial operational phases. We believe that the potential for funding a voluntary national accreditation program exists, and we plan to help cultivate that potential. We understand that not all health departments are prepared to become accredited, and this has been factored into the design of a national program (through recommendations to promote the availability of technical assistance and other support for such health departments). We recognize that a national database could facilitate research and enhance the evidence-base regarding best practices and the utility of accreditation as a performance improvement method. Finally, we acknowledge that long-term success will require maintaining the credibility of the accreditation program and continuing interest in the quality of public health departments.

A summary of the substantive changes that were made to the proposed model include the following:

- Guiding principles for the composition of the Governing Board have been revised (page 8).

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- Principles for relationships with state-based accreditation programs have been expanded, such that national accreditation is automatically conferred on health departments accredited by a state-based program that has received formal recognition/approval from the national program (pages 9-10).
- Territorial and tribal public health departments are specifically included in the definition of "eligible applicants" (page 9).
- While applicants are expected to demonstrate compliance with all domains for each program offered, the conformance assessment measurements will be applied on a sampling basis (page 12).

Additional clarifications have been made throughout this document in response to questions and comments received. Public comment yielded both support and concerns about a voluntary national accreditation program, and this feedback will inform the program's

structure and operation in an implementation phase. The details regarding public comment will be described in the full report.

We thank all public health professionals who took the time to participate in public comment activities. We also thank the executive directors of the American Public Health Association (APHA), Association of State and Territorial Health Officials (ASTHO), National Association of County and City Health Officials (NACCHO), and National Association of Local Boards of Health (NALBOH), who serve as the Planning Committee and provided executive oversight to this effort (see inside cover for a full listing). Our recommendations have been submitted to the Planning Committee, who in turn will share them with their organizations to determine potential action. The Planning Committee also will share the recommendations with the Robert Wood Johnson Foundation and the Centers for Disease Control and Prevention, both of whom funded this effort.

## HOW THE MODEL WAS DEVELOPED

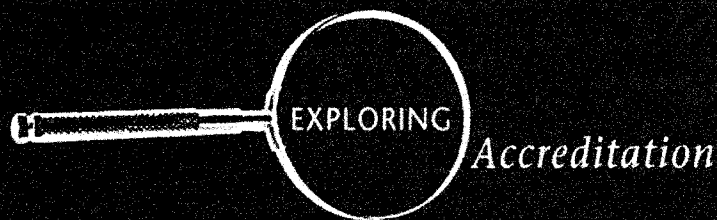
In August 2005, the Planning Committee established a 25-member Steering Committee with representatives from public health practice organizations at the local, state and federal levels. The guiding philosophy of the Steering Committee was to leave no stone unturned, considering all possible alternatives related to the issues at hand. Its decisions were informed by the work of four workgroups in the areas of Governance and Implementation, Finance and Incentives, Research and Evaluation, and Standards Development.

The workgroups also were comprised of public health practitioners from all three levels of government and members of academia. Throughout the duration of the project, the workgroups developed reports that included consensus recommendations, other alternatives that were considered, and the rationale for each decision. Subject matter experts were also consulted for various issues. Discussion papers with information on accreditation in public health and in other sectors were developed to stimulate the workgroups' discussions.

In April 2006, the Steering Committee met to consider all of the information that was gathered in the previous months and develop a proposed model. The proposed model was distributed for public comment from May through July 2006. During that time, comments were solicited through several mechanisms:

- Public presentations and feedback forms distributed at those events.
- Conference calls.
- E-mail messages and an online survey on the project Web site.
- A satellite broadcast.
- An opinion survey sent to state, territorial, and local health officials.

Extensive feedback was received, and the Steering Committee met in August to consider all public comment as well as a business case developed by the Finance and Incentives Workgroup. As a result of the feedback, the model was revised, consensus emerged that the revised model is feasible and desirable to implement, and the Steering Committee recommended that a voluntary national accreditation program be implemented accordingly.



## GOVERNANCE

A new, not-for-profit entity should be created to oversee the accreditation of state and local governmental public health departments by adopting standards and making final conformance decisions. Having a new, independent entity would promote impartiality and avoid real or perceived conflict of interest should the process be conducted by an existing organization. The Planning Committee should provide an incorporation process (articles of incorporation, bylaws, governing board nominations process) that establishes the legitimacy and credibility of the accrediting entity.

### *Accrediting Entity*

The accrediting entity should:

- Be a recognized legal entity and a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code.
- Be separate and independent of the influence of any single organization.
- Provide relevant accreditation services and avoid activities that could conflict with accreditation activity.
- Orient applicants to the application and assessment processes.
- Develop and maintain partnerships.
- Assess conformance.
- Train assessors to assure a consistent and fair process.
- Work with partners to ensure the availability of training and technical assistance.
- Encourage research and evaluation to improve the accreditation program.

### *Governing Board*

This new entity should have a governing board that would obtain incorporated status, develop bylaws, and hire staff. The responsibilities of the governing board should include, but not be limited to, the following:

- Approving standards.
- Awarding and revoking/suspending status.
- Overseeing the appeals process.
- Ensuring adequate representation of key stakeholder interests.

- Including public representation in all decision making.
- Establishing clear and effective controls against conflict of interest.
- Ensuring ongoing evaluation and continuous quality improvement of the accreditation program.
- Overseeing the development and maintenance of a national database for performance improvement and research purposes.
- Promoting research that would improve the accreditation program.
- Maintaining the administrative and fiscal capabilities to successfully operate a national accreditation effort.
- Working actively with partners to promote their development of positive incentives.
- Working with partners to advocate for and promote training and technical assistance and assure that they are accessible and available to applicants.

The Planning Committee should appoint the Governing Board. Membership of the governing board should include both organizational representatives and individuals with relevant experience and expertise. While specific slots are not being recommended, the following principles should be applied in determining the composition:

- Members with recent experience in state or local public health should comprise the majority.
- Members should include those with recent experience on public health governing boards.
- Diversity of ethnicity, experience, and geographic location is important.
- Terms and term limits should be specified.
- Members should include academics, state and local elected officials, health care providers, representatives from federal agencies, and others with a public health background.
- One or more public members should be appointed.
- Members should include representatives of the founding organizations and other key public health organizations.

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## *Relationships with State-based Accreditation and Performance Improvement Programs*

The goal of the voluntary national accreditation program is to establish quality and consistency that is recognized at federal, state, and local levels. Existing state-based accreditation and performance improvement programs are providing a laboratory for a national program and national standards. It is important that state and national programs continue to learn from, and maintain good relationships with, each other.

A national program should complement state-based efforts to establish performance standards for public health departments. This may be accomplished by a recognition/approval process through which state accreditation programs could demonstrate conformity with national accreditation standards and processes. Such a process should not preclude states from having additional requirements over and above those in the national program. If a state accreditation program is not so recognized, it may seek to act as an agent.

## *Agents/contractors*

The accrediting entity may use agents (such as state-based accreditation programs and public health institutes) to provide training, preparatory services, site visits, and other services. The accrediting entity is responsible for developing policies and procedures regarding relationships with agents. The agent must demonstrate to the satisfaction of the governing board that its services are consistent with those of the accrediting entity. When agents are used, the governing board still makes the final accreditation determination.

## *Confidentiality*

Confidentiality of information is important to achieving the quality improvement and continuous performance improvement goals of the voluntary national accreditation program. The accrediting entity may publicize the accreditation status of applicants, but should hold all background information from the process as confidential except as required by law.

## ELIGIBLE APPLICANTS

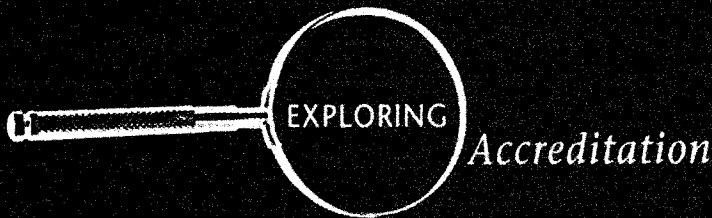
The governmental entity that has the primary statutory or legal responsibility for public health in a state, a territory, a tribe or at the local level is eligible for accreditation. To be eligible, such entities must operate in a manner consistent with applicable federal, state, territorial, tribal, and local statutes. The determination of eligibility to apply for accreditation should be flexible, recognizing the variety of jurisdictions with local public health departments and the variety of state, territorial, tribal and local governmental agencies that may carry the primary responsibility for public health.

### *State and Territorial Health Department*

The governmental body recognized in the state's or territory's constitution, statutes, or regulations or established by Executive Order, which has primary statutory authority to promote and protect the public's health and prevent disease in humans, is eligible to apply. Umbrella organizations and collaborations among state or territorial agencies may apply for accreditation if the primary entity is a part of the organization or collaboration. Where the state or territorial health department operates local and/or regional health departments, a single applicant or a number of individual applicants may choose to apply. Compliance with local-level standards must be demonstrated for each local/regional unit.

### *Local Health Department*

The governmental body serving a jurisdiction or group of jurisdictions geographically smaller than a state, which is recognized in the state's constitution, statute, or regulations or established by local ordinance or through formal local cooperative agreement or mutual aid, and which has primary statutory authority to promote and protect the public's health and prevent disease in humans, is eligible to apply. The entity may be a locally governed health department, a local entity of a centralized state health department, or a regional or district health department. An entity that meets this definition may apply jointly with other local-level eligible entities for accreditation status if some essential services are provided by sharing resources and the manner in which this occurs is clearly demonstrated.



# EXPLORING Accreditation

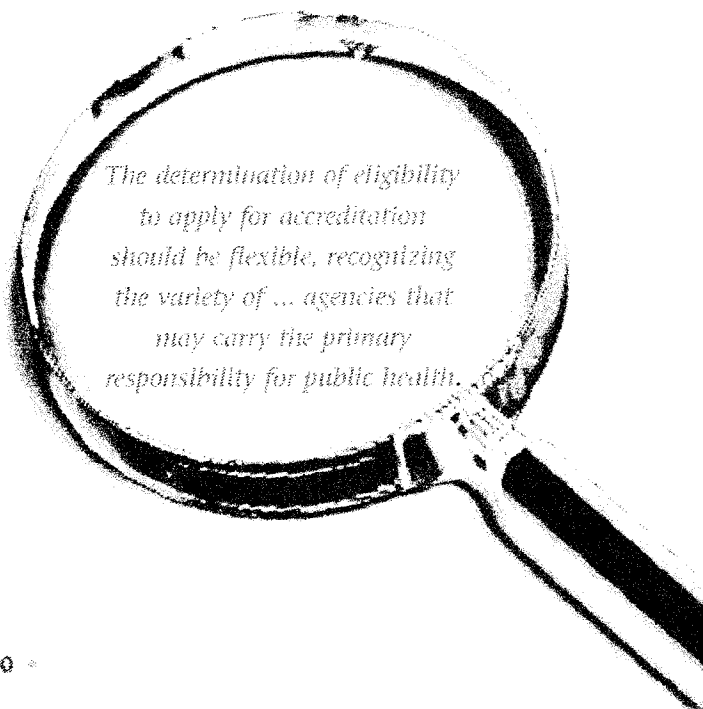
## *Tribal Health Department*

The governmental health department serving a recognized tribe that has primary statutory authority to promote and protect the public's health and prevent disease in humans is eligible to apply.

Applications should include an opportunity to describe situations where statutes or other legal mechanisms delegate authority for governmental public health functions to an agency other than the applicant health department. The applicant health department should demonstrate collaboration with other agencies with respect to those functions or, in some instances, may request exemptions from those standards that are being met in a different governmental agency. The designation of accreditation should note any exemptions provided.

Additionally, the applicant health department may include another entity with statutory authority to perform some public health functions in its application, and the other entity may be accredited or recognized solely for the standards that it meets.

The purpose of the voluntary accreditation program is to improve the quality and performance of public health departments without regard to their structure. Health departments may wish to explore cooperative arrangements to help ensure compliance with accreditation standards.



*The determination of eligibility to apply for accreditation should be flexible, recognizing the variety of ... agencies that may carry the primary responsibility for public health.*

## PRINCIPLES TO GUIDE STANDARDS DEVELOPMENT

A voluntary national accreditation program is a tool to advance the pursuit of excellence, continuous quality improvement, and accountability for the public's health. Standards should be developed in a way that promotes these attributes.

Standards should address process, capacity, and indicators of outcomes. As the evidence is established, outcome standards that address improved health indicators could be added; in the shorter term, outcomes should address achievements such as establishing programs and implementing new policy. Standards should focus on outcomes that can reasonably be influenced by health departments, understanding that public health is inextricably linked to many systems and occurrences that affect health status.

NACCHO's Operational Definition of a Functional Local Health Department should serve as the foundation of standards (and associated measures) for local health departments. ASTHO is undertaking a review of state public health services that may inform the standards development process for state health departments. Existing performance standards for state and local health departments should also be considered.

National Public Health Performance Standards Program (NPHPSP) model standards and measures could be used in developing health department standards, recognizing that NPHPSP standards have been developed to assess systems, not departments.

State, territorial, and local health departments should be held accountable to the 11 domains listed on the following page, with standards under each domain that are specific to their respective responsibilities. Additionally, the standards should be complementary and mutually reinforcing to promote the shared accountability between state/territorial and local health departments. The governing board will determine which set of standards is applicable to tribal health entities.

One or more standards should be associated with each domain and at least one criterion should be used to operationalize each standard. Measures, or the objective means to determine whether, and the extent to which,



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each criterion is met would be established for each criterion. Measures allow an observer to characterize the level of quality achieved for each criterion.

Collectively, standards and their associated criteria define the capacity expected of an accredited department. These criteria should be reflected in the day-to-day work of individual health department programs but are not meant to be illustrated only through programs since the capacity of a local health department to meet the needs of its community is represented by its ability to address new or emerging situations as well as those associated with day-to-day operations.

Program specific standards and criteria exist separately and are outside the scope of the national voluntary accreditation process since programming varies from state to state and locality to locality.

Standards should be designed to assure public health protection while improving the public's health. All applicant health departments should be held to the same standards. However, different measurements may be used to recognize the variety of ways in which the standards are met by health departments with different capacities, governance structures, statutory authorities, other quality improvement processes and health status of the population served. The program should promote continuous quality improvement, and over time, the level of acceptable performance should be increased as the norm of performance rises.

Selected principles espoused by the American National Standards Institute should be applied to developing and updating standards:

- Consensus on a proposed standard by a group or "consensus body" that includes subject matter experts and representatives from materially affected and interested parties.
- Broad-based public review and comment on draft standards.
- Consideration of and response to comments submitted by voting members of the relevant consensus body and by public review commenters.
- Incorporation of approved changes into a draft standard.

Standards should reflect input from all levels of government. Further, they should be updated and refined on a regular basis to reflect the best available evidence.

Standards need to be sensitive to laws governing state, territorial, tribal and local public health entities, and applicants should be permitted to request a waiver or modification of an accreditation standard if compliance could put them at risk of violating state, territorial, tribal or local law.

In order to promote a common agenda and linkages among all levels of government, those involved in developing and updating standards and measures in a voluntary national accreditation program should work closely with entities supporting other national goals, standards and measures for public health.

## *Domains\**

1. Monitor health status and understand health issues.
2. Protect people from health problems and health hazards.
3. Give people information they need to make healthy choices.
4. Engage the community to identify and solve health problems.
5. Develop public health policies and plans.
6. Enforce public health laws and regulations.
7. Help people receive health services.
8. Maintain a competent public health workforce.
9. Use continuous quality improvement tools to evaluate and improve the quality of programs and interventions.
10. Contribute to and apply the evidence base of public health.
11. Govern and manage health department resources (including financial and human resources, facilities, and information systems).

\* See Appendix B (page 24) for examples of standards and measures.

# **EXPLORING** *Accreditation*

Careful consideration should be given to how standards for health departments can be applied in an efficient, non-duplicative and non-conflicting manner, and the governing board should consider ways to use alternative measures of meeting standards, e.g., when a standard essentially has been demonstrated to have been met through reporting requirements for contracts, or state or federal grants.

## **CONFORMITY ASSESSMENT PROCESS**

The conformity assessment process should begin with the health department undertaking training and a readiness review. If the health department determines that it is ready, it secures application materials and completes a self assessment. The application should include confirmation that the applicant's elected official/governing body supports the application. The applicant submits its completed self assessment to the accreditation staff who review it. When it is accepted as complete, a site visit is arranged.

Applicants are expected to be in compliance with all domains for each program offered. Performance assessment measurement will be applied on a sampling basis to determine compliance.

A team conducts the site visit, writes a report, and makes a recommendation based on the findings and the self assessment. There will be an opportunity for the applicant to address any deficiencies that are noted. The site visit team includes peers without conflicts of interest and other subject matter experts/consultants, all of whom meet training and performance requirements of the accrediting entity.

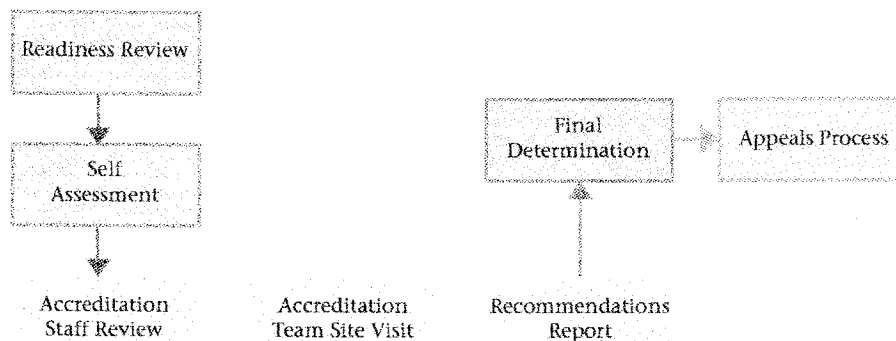
The governing board reviews the recommendation and votes on whether to award accreditation status. As a result of the assessment, the applicant may be fully accredited, conditionally accredited, or not accredited. If the applicant is conditionally accredited, it should be given a specific length of time to improve performance as required to achieve full accreditation status.

If an applicant doesn't agree with a decision made on a waiver request or during the accreditation process (e.g., it believes it should have a different status or met a certain standard that the reviewers determined they did not meet or partially meet), it should be able to appeal to an appeals board.

The accrediting entity should offer pre-qualifying preparation assistance that includes the orientation of applicant staff to the accreditation process, provision of readiness review and self-assessment tools that are developmental in design and use, and references for available consultation on avenues to meeting and exceeding standards.

If the accrediting entity learns about an applicant not meeting a standard or requirement after the applicant has been accredited, the accrediting entity should be responsible for investigating and determining whether or not the accreditation status should be revoked. Health departments that lose their status should be permitted to re-apply after a period of time.

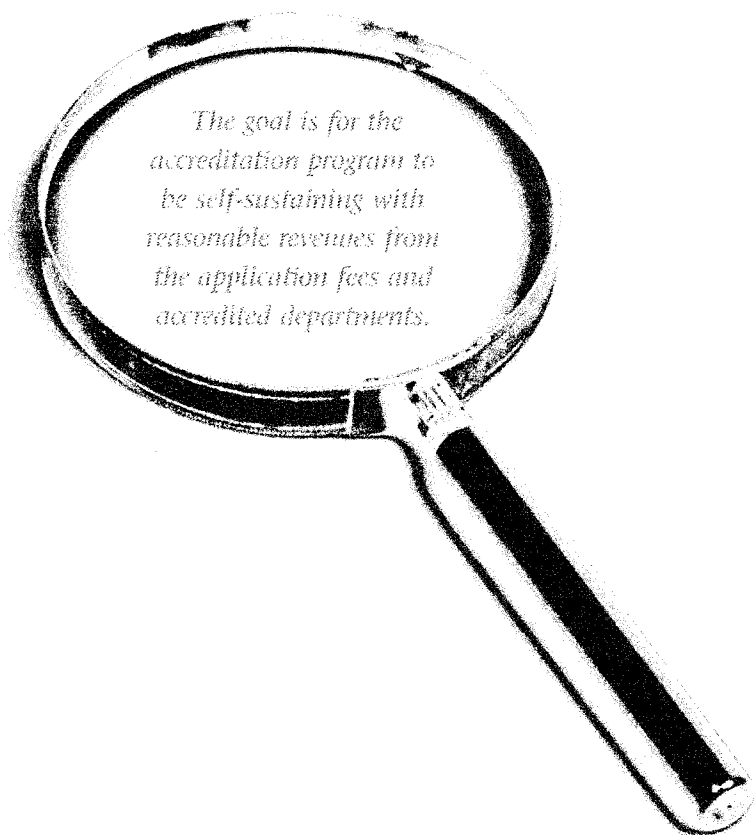
## **CONFORMITY ASSESSMENT PROCESS**



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## FINANCING

Financing the development and operation of the accreditation program can be considered in three phases. In the initial development phase, a consortium of funders interested in promoting public health improvement should be sought to fund the start-up organization itself. In the initial operating phase, funding should be a mix of direct support from funders for operations and revenue from services, such as applicant fees and training fees. Over time, more of the funding should come from the applicants, assuring a customer focus in the accreditation program. In full operation, the goal is for the accreditation program to be self-sustaining with reasonable fee revenues from the application fees and accredited departments. Support for applicant fees could still come from other sources. The accreditation program should advocate for and promote incentives and capacity building in health departments.



### *Financing the Initial Development and Operations of the Accreditation Program*

The goal of the start-up phase should be to maximize the credibility of the accrediting entity and its cost-effectiveness. It will be important to simplify processes wherever possible to promote efficiency for the applicants and accrediting entity. The principal start-up activities should include securing leadership, negotiating contracts with vendors and consultants, developing the standards, creating the assessment process, developing information systems, and conducting beta tests or pilot programs. Other start-up activities, such as marketing to applicants and potential funding sources, managing an application process, recruiting and training site visitors, and managing the assessment process through an initial round can be tailored to the number of applicants expected.

The incorporators should finance the initial legal work to establish the non-profit corporation, provide in-kind services to refine the business plan, and work with a consortium of grant-makers, government agencies, and organizations of state and local health departments to finance the start-up of the voluntary national accreditation program.

Potential private sector funders include grant-making organizations promoting health care quality improvement, public health performance improvement, and general government improvement. Within the government sphere, the U.S. Department of Health and Human Services agencies (Agency for Healthcare Research and Quality, Food and Drug Administration, and Centers for Medicare and Medicaid Services as well as CDC and Health Resources and Services Administration) are most important, but the Environmental Protection Agency (environmental health, toxicology), the Department of Agriculture (food safety and WIC), and the Department of Homeland Security (bioterrorism response and emergency management response) should be interested in promoting continuous quality improvement through accreditation. The financing plan should recognize that sponsoring organizations and health departments could be willing to provide in-kind contributions and volunteer services. Examples include providing space and equipment, volunteers serving on committees, assisting in the recruitment of funders, and/or assisting in training and peer review.



#### *Financing the On-going Operations of the Accreditation Program*

On-going operations costs include those related to maintaining the standards, training and supervising the site visit teams, administering and evaluating the program, maintaining the supporting information systems, and promoting research.

Operations should be funded in part by the applicants, with other funding sources to decrease the burden on them. Having applicants help pay for the accreditation operation increases the connection between the costs and the value to the target market. Additionally, applicant fees for a voluntary program build in cost control signals for the operation and help keep cost containment a high priority.

The application fee should be designed to offset the accrediting entity's costs. Working with states and federal agencies, the accrediting entity could support plans for treating fees as allowable costs or indirect costs in grants and contracts, subsidizing fees of health departments, etc. The accrediting entity also should work with applicant health departments to support budget requests for funding accreditation applications by providing data on the cost-effectiveness and value of accreditation.

Other funding sources may include organizations at the national, state and local level that seek to promote performance improvement and continuous quality improvement in public health services, and organizations that use information about performance and quality in decision-making. The accrediting entity should work with federal agencies to consider application fees and health department accreditation costs (self-assessment, site visit, training, and other direct costs) as allowable costs in grants, reimbursement fees for services, contracts and cooperative agreements.

#### *Controlling the Cost of the Accreditation Program*

Affordability of fees is critical to success, particularly when the value of a voluntary national accreditation program is being established. Affordability should be measured by the actual fees charged, by the cost of the process to the applicant, and by the perceived cost-effectiveness of the operation.

The fees and the costs of becoming accredited should be commensurate with the value of accreditation to the applicants. The costs of the accreditation program's operation should be commensurate with the value of accreditation to the public's health and to the sponsoring agencies.

The accrediting entity should design:

- A streamlined accreditation process making maximum use of electronic data exchange.
- Standardized formats that can also meet the needs of funding agencies and other oversight bodies.
- Goal-directed self-assessment and site visit assessment procedures.
- An orientation to the accreditation process for applicants.

Benchmarks and best practices for completing the application and conducting the self-assessment should be made available in the pre-application orientation, providing guidance on cost-effective ways to complete the processes and assisting applicants in controlling costs. Providing sample policies from high performing agencies, setting guidelines on the maximum length of documentation, and providing for the use of existing data formats to submit information are other techniques to control applicant costs.

The accrediting entity should establish its architecture to control costs. Volunteer committees should be used to develop and maintain the standards, with significant participation by accredited state and local public health departments and academics. The standards and benchmarks used in accreditation should be simple, not complex. The accreditation cycle should be reasonably long, using interim data submissions and targeted follow-up on improvement plans to assure on-going attention to transforming public health departments into high performing, continuously improving organizations.

In the initial development and operation phases, in-kind contributions, volunteer services, and contractual services should be highly valued by the accrediting entity, but there also should be sufficient investment in training and supporting site review teams to assure standardized assessments and efficient administration. As the

# A VOLUNTARY NATIONAL ACCREDITATION PROGRAM FOR STATE AND LOCAL PUBLIC HEALTH DEPARTMENTS

program develops and the number of accredited public health departments grows, the accrediting entity should reassess the balance of volunteer, in-kind, and contractual services to assure continuing cost-effectiveness.

The accrediting entity should provide services to encourage cost controls in accreditation processes at the applicant level. It also should work with state and local public health departments, designing its assessment processes to streamline the applicant's work while maximizing the value of the self-assessment, data collection, site visit, and feedback activities. Moreover, the accrediting entity should collect and aggregate data on the costs of the accreditation process, including costs to applicants. These data should be available to applicants for benchmarking their costs and identifying potential cost controls. Finally, making use of a recognition/approval process through which existing state-based programs could demonstrate conformity with national standards is another way to keep costs down.

## INCENTIVES

When surveyed, public health leaders identified quality and performance improvement, consistency among health departments, and recognition by peers as the most important benefits of accreditation. In the developmental phases of the voluntary national accreditation program, incentives should be uniformly positive. Incentives should include the following:

### *High Performance and Quality Improvement*

Among state and local public health departments there is a high value placed on performance improvement and continuous quality improvement. A successful accreditation program should provide a transforming process that supports these goals.

### *Recognition and Validation of the Public Health Department's Work*

A successful accreditation program should be credible among governing bodies and recognized by the general public, providing accountability to the public, funders and governing bodies (legislatures and governors at the state/territorial level; tribal governments; and boards of health, county commissions, city councils, and officials at the local level). The accrediting entity should establish

an information program which promotes the value of accreditation to the public and key stakeholders.

Accredited public health departments should receive rights to use credentials in promoting their work to their constituencies and in seeking access to grants, contracts, and reimbursement preferences. The accrediting entity should provide documentation, promotional materials for customized use, and specialized support to accredited public health departments. In addition, the accrediting entity should maintain an active program promoting the value of quality and performance improvement in public health and the role of accreditation in encouraging and documenting continuous improvement in public health departments.

### *Access to Resources and Services to Undergo the Accreditation Process*

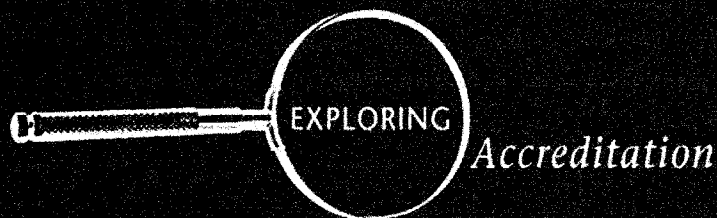
To encourage state and local public health departments to seek accreditation, the accrediting entity should provide assistance for the application process as detailed under "Conformity Assessment Process" (page 12). The accrediting entity also should work with potential funders to develop scholarship programs and encourage peer-consulting services for departments needing assistance in specific domains. There should be no penalty (other than expended costs and fees) for terminating the application process during the pre-qualification process or before an accreditation decision is reached.

### *Improved Access to Resources*

The accrediting entity should partner with public health organizations, foundations, and governmental agencies to promote incentives for accredited public health departments.

These can include:

- Access to funding support for quality and performance improvement.
- Access to funding to address gaps in infrastructure identified in the accreditation process.
- Opportunities to pilot new programs and processes based on proven performance levels.
- Streamlined application processes for grants and programs.
- Acceptance of accreditation in lieu of additional accountability processes.



Accreditation also has been shown to enhance recruitment and retention of a high quality work force through reputation and an enhanced working environment.

#### *Access to Support for Continuous Quality Improvement*

The accrediting entity should maintain active support for continuous quality improvement among accredited public health departments. The components of this transformational practice support program may include in-person and Web-based services, best practices exchange, peer-group data exchange and analysis, and similar resources. Leadership awards may be developed as the accreditation program matures.

## PROGRAM EVALUATION

A logic model has been developed to serve as the framework for evaluation of a voluntary national accreditation program (see Appendix C, page 26). Evaluation of the program should be highly emphasized throughout the process of planning, development and implementation. The associated costs need to be factored into the program's budget.

Furthermore, the accrediting entity should determine from the outset and in a transparent way which evaluation results will be kept confidential and which will be shared publicly or made available to researchers and others. The evaluation plans should be flexible enough to be implemented by many different organizations (i.e., the national accreditation program doesn't have the monopoly on data or evaluation). In addition, quality data collection is critical, and data should be collected in a standardized way that allows it to be integrated with data from other systems.

Aspects of the program to evaluate include those described as follows.

#### *Effectiveness of the Accrediting Entity*

- Is the accrediting entity appropriately staffed and are staff members performing well?
- Does the accrediting entity use results of evaluation to improve the accreditation program?
- Is the financial performance meeting the goals set by the governing board?

#### *Accreditation Process*

- How much staff time (from both applicant and accrediting entity) is required to complete the accreditation process?
- Are the required activities for each step of the accreditation process clear and understandable to all participants?
- How useful are the various types of training and technical assistance?

#### *Marketing and Customer Satisfaction*

- How many agencies are participating in the accreditation process and what are their characteristics?
- How satisfied are participating agencies with the accreditation program?

#### *Accreditation Standards and Measures*

- Are the standards appropriate? Do they need to be changed?
- Are the standards and measures reliable and valid?

#### *Improved Performance of Accredited Agencies*

- What improvements in agency performance have resulted from participation in the accreditation program?

#### *Contribution to Evidence Base*

- Is the accreditation process capturing data to support key research questions?
- Does the accreditation program have policies and processes in place to support the use of accreditation data by researchers?

#### *Credibility of Accreditation Program*

- Is the accreditation program perceived as credible by potential applicants and decision makers?

# A VOLUNTARY NATIONAL ACCREDITATION PROGRAM FOR STATE AND LOCAL PUBLIC HEALTH DEPARTMENTS

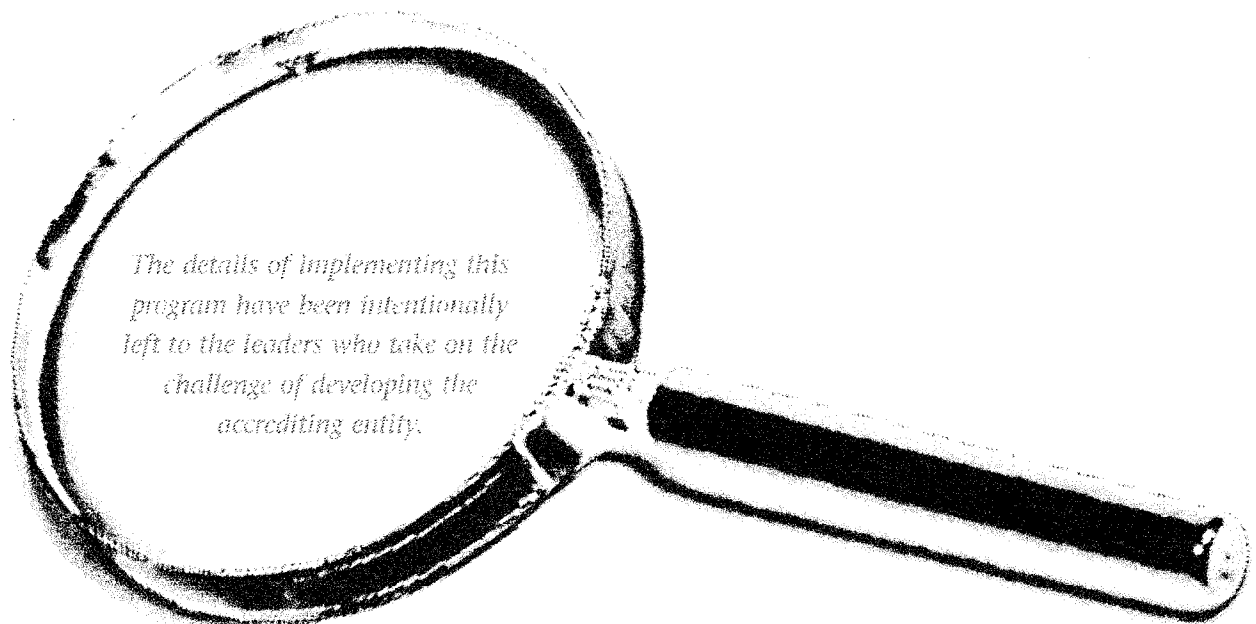
## IMPLEMENTATION

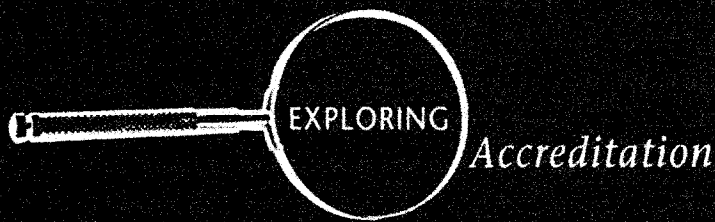
The Steering Committee has developed a recommended model to serve as a framework around which a voluntary national accreditation program could be built. The details of implementing this program have been intentionally left to the leaders who take on the challenge of developing the accrediting entity. Implementation would be a multi-year process, and it would be important to maintain momentum around performance improvement activities during that time.

Implementation activities would include:

- Establishing a governing board.
- Developing a detailed business plan.
- Setting up an organization and engaging in the start-up activities.
- Getting "agreed upon" standards in place.
- Undertaking beta testing or pilot testing to develop the processes.
- Phasing-in accreditation activities in an orderly fashion.

This multi-year process will allow adjustment of the voluntary national accreditation program to make it more successful in promoting public health performance and improved community health outcomes, and to increase the cost-effectiveness of the operation.





## NEXT STEPS

The Planning Committee has received these recommendations, and will share them with their organizations for potential action. The Planning Committee will also share these recommendations with the Robert Wood Johnson Foundation and the Centers for Disease Control and Prevention, both of whom funded this effort. In addition, these recommendations are available to members of all participating organizations.

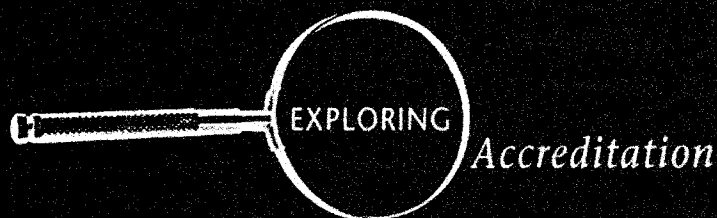
A full report is under development and will be released in the Fall. The full report will include a detailed methodology, a description of the business case, a research agenda to further support the success of a voluntary national accreditation program as a tool to improve public health, and a full summary of the public comment. The full report will be posted on the project website, and members of the organizations represented on the Steering Committee will be notified when it becomes available.

Preliminary outreach efforts have indicated some interest and support from county commissioners, mayors, state legislators and governors' health policy advisors. Another next step will be to continue to work to engage these groups in the establishment of a voluntary national accreditation program.



## **APPENDIX A**

**STEERING COMMITTEE, WORKGROUP MEMBERS,  
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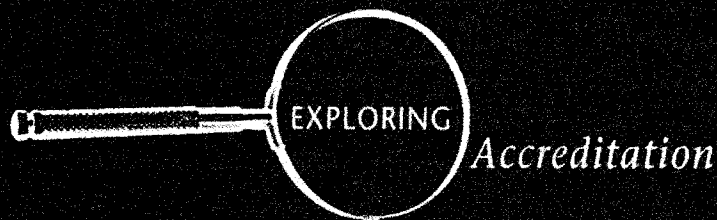
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## APPENDIX B

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### EXAMPLES OF STANDARDS AND MEASURES

The following standards and measures are meant to provide **examples** of what *might* be used in a voluntary national accreditation program. These examples are based on NACCHO's Operational Definition, the National Public Health Performance Standards Program State Instrument, and the Washington State Public Health Improvement Plan.

*These examples have not been approved by the Exploring Accreditation Steering Committee, and feedback is not being sought at this time.*

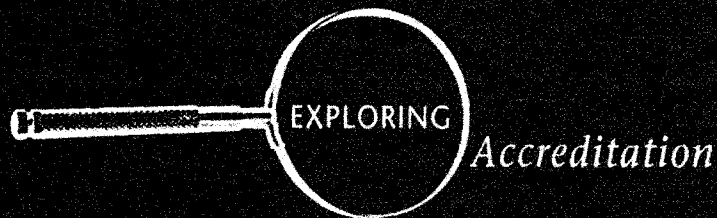
1. Protect people from health problems and health hazards		
	STATE	LOCAL
<b>Standard</b>	Collaborate with public and private laboratories, which have the ability to analyze clinical and environmental specimens in the event of suspected exposures and disease outbreaks.	Maintain access to laboratory expertise and capacity to help monitor community health status and diagnose and investigate public health problems and hazards.
<b>Measure</b>	Written procedures describe how expanded lab capacity is made readily available when needed for outbreak response, and there is a current list of labs having the capacity to analyze specimens.	Has current list of available labs and current written protocols and/or guidelines for handling clinical and environmental laboratory samples.

2. Maintain a competent public health workforce		
	STATE	LOCAL
<b>Standard</b>	Identify the public health workforce (the workforce providing population-based and personal health care services in public and private settings across the state) needs of the state and implement recruitment and retention policies to fill those needs.	Recruit, train, develop, and retain a diverse staff.
<b>Measure</b>	Personnel in regulated professions are assessed to assure that they meet prescribed competencies including certifications, licenses, and education required by law or recommended by local, state, or federal policy guidelines.	Workplace policies promoting diversity and cultural competence, describing methods for compensation decisions, and establishing personnel rules and recruitment and retention of qualified and diverse staff are in place and available to staff.

3. Evaluate and improve programs and interventions		
	STATE	LOCAL
<b>Standard</b>	Evaluate the effectiveness and quality of all programs and activities and use the information to improve performance and health outcomes.	Evaluate the effectiveness and quality of all programs and activities and use the information to improve performance and health outcomes.
<b>Measure</b>	There is a planned, systematic process in which all programs and activities, whether provided directly or contracted, have written goals, objectives, and performance measures. Program performance measures are tracked, the data are analyzed and used to change and improve program activities and services and/or revise curricula/materials.	There is a planned, systematic process in which all programs and activities, whether provided directly or contracted, have written goals, objectives, and performance measures. Program performance measures are tracked, the data are analyzed and used to change and improve program activities and services and/or revise curricula/materials.



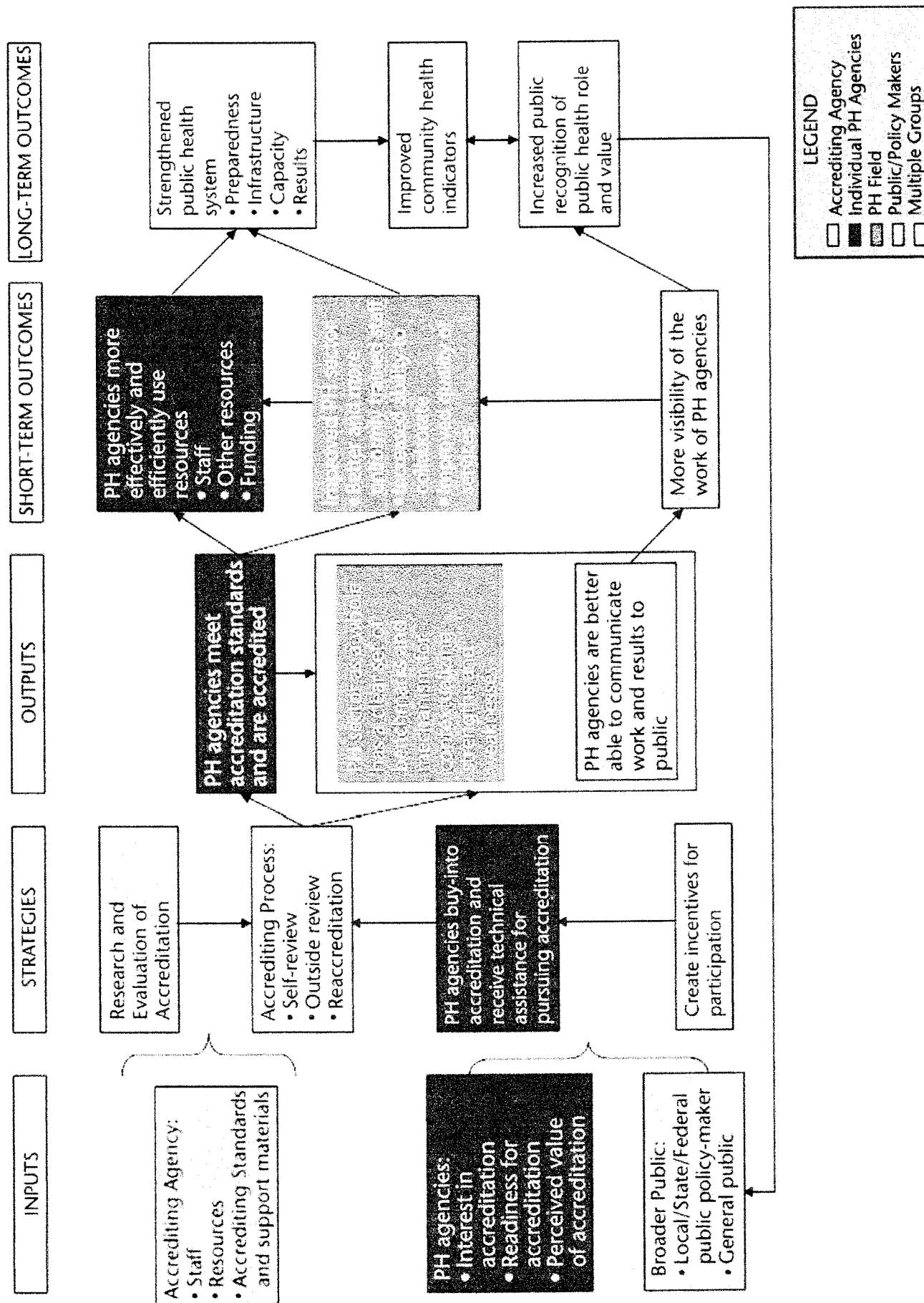
## APPENDIX C

### LOGIC MODEL



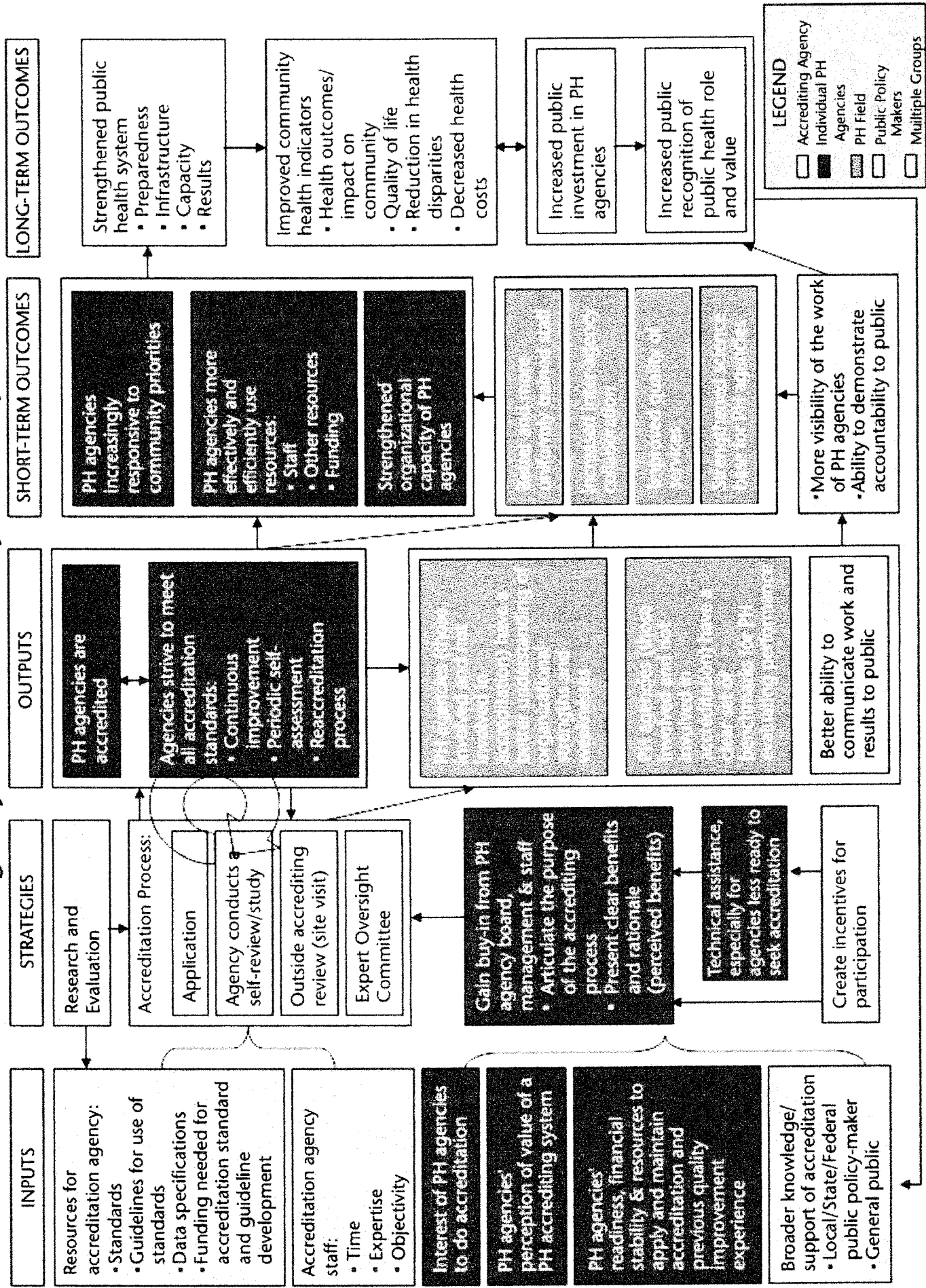
# Public Health Agency Accreditation System Implementation (Simplified)

July 21, 2006



# Public Health Agency Accreditation System Implementation

July 21, 2006



## **APPENDIX D**

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## **GLOSSARY**



## GLOSSARY

**Accreditation** – (1) the development of a set of standards, a process to measure health department performance against those standards, and some form of reward or recognition for those agencies meeting the standards. (2) the periodic issuance of credentials or endorsements to organizations that meet a specified set of performance standards. (3) A voluntary conformity assessment process where an organization or agency uses experts in a particular field of interest or discipline to define standards of acceptable operation/performance for organizations and measure compliance with them. This recognition is time-limited and usually granted by nongovernmental organizations.

1 – *EA project definition*

2 – *Lee Thielen*

3 – *Michael Hamm*

**Accountability** – the principle that individuals, organizations and the community are responsible for their actions and may be required to explain them to others.

**Benchmark** – a standard established for anticipated results, often reflecting an aim to improve over current levels.

**Beta testing (pilot testing)** – allowing organizations to use a new product before it is officially launched.

**Capacity** – resources and relationships necessary to carry out the core functions and essential services of public health; these include human resources, information resources, fiscal and physical resources, and appropriate relationships among the system components.

– *Bernard Turnock, Public Health: What It Is and How It Works*

**Conformity assessment** – the determination of whether a product, process, or service conforms to particular standards or specifications. Activities associated with conformity assessment may include testing, certification, accreditation, and quality assurance system regulation.

– *Michael Hamm*

**Conditional accreditation** – a rating that an organization receives when a number of standards were scored 'not compliant' at the time of the onsite survey.

– *Joint Commission on Accreditation of Healthcare Organizations (JCAHO)*

**Continuous quality improvement** – an ongoing effort to increase an agency's approach to manage performance, motivate improvement, and capture lessons learned in areas that may or may not be measured as part of accreditation.

– *Public Health Foundation (PHF)*

**Core standards** – the fundamental activities or group of activities, so critical to an organization's success that failure to perform them in an exemplary manner will result in deterioration of the organization's mission.

**Customer** – the person or group that establishes the requirement of a process and receives or uses the outputs of that process, or the person or entity directly served by the organization.

– *Serving the American Public: Best Practices in Performance Measurement*

**Domain** – a broad area having some common characteristics and for which criteria and standards are specified for assessing performance in that domain.

– *Michael Hamm*

**Evaluation** – Systematic approach to determine whether stated objectives are being met.

– *Brownson, RC, Baker EA, and Novick, LF. Community-based Prevention: Programs That Work. Gaithersburg, MD: Aspen Publishers, Inc. 1999*

**Impact** – the total, direct and indirect, effects of a program, service or institution on a health status and overall health and socio-economic development.

**Measure** – a statement of quantification/qualification/action to reach a desired condition/state of affairs; the means of determining compliance with a standard.

*Example:* The number of trained epidemiologists available to investigate outbreaks (capacity measure).

*Example:* The percentage of notifiable diseases reports submitted within the required time lines (process measure).

*Example:* Percentage of disease outbreaks that are controlled and contained before deaths or disabling conditions occur (outcome measure).

Outcome – (1) the desired result of a service or program; (2) indicator of health status, risk reduction, and quality-of-life enhancement. For the purposes of the Exploring Accreditation project, short-term outcomes are defined as results that are achieved in 1 year; results of intermediate outcomes are achieved between 2-5 years; and results of long-term outcomes are achieved between 5-10 years.

– (2) Bernard Turnock, *Public Health: What It Is and How It Works*

Performance standard – a generally accepted, objective form of measurement that serves as a rule or guideline against which an organization's level of performance can be compared.

– *Guidebook for Performance Measures*  
*Turning Point Program*

Performance improvement/

Quality improvement – Systematic processes of designing and developing cost-effective and ethically-justifiable methods to address performance gaps or improve products; implementing processes, procedures, and/or interventions in order to obtain better results; and/or evaluate financial and non-financial findings in order to improve efficiency in obtaining results. Quality improvement contains the element of "doing the right thing" while performance improvement is focused on doing what we are doing "better."

– *From Silos to Systems Turning Point Program*

Research - A systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalized knowledge.

-*United States Department of Health and Human Services. Healthy People 2010. Washington, DC: US Department of Health and Human Services, 2000*

Standard – a desired condition/state of affairs, and must be actionable, attainable, and measurable.

[WWW.EXPLORINGACCREDITATION.ORG](http://WWW.EXPLORINGACCREDITATION.ORG)



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EXHIBIT 3  
DATE 2/2/09  
HB 173

# Operational Definition

of a  
functional  
local health  
department



Governmental public health departments are responsible for creating and maintaining conditions that keep people healthy. At the local level, the governmental public health presence, or "local health department," can take many forms.<sup>1</sup> Furthermore, each community has a unique "public health system" comprising individuals and public and private entities that are engaged in activities that affect the public's health.

Regardless of its governance or structure, regardless of where specific authorities are vested or where particular services are delivered, everyone, no matter where they live, should reasonably expect the local health department to meet certain standards.<sup>2</sup>

#### **A FUNCTIONAL LOCAL HEALTH DEPARTMENT:**

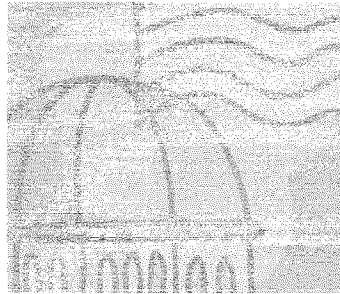
- ✧ Understands the specific health issues confronting the community, and how physical, behavioral, environmental, social, and economic conditions affect them.
- ✧ Investigates health problems and health threats.
- ✧ Prevents, minimizes, and contains adverse health effects from communicable diseases, disease outbreaks from unsafe food and water, chronic diseases, environmental hazards, injuries, and risky health behaviors.
- ✧ Leads planning and response activities for public health emergencies.
- ✧ Collaborates with other local responders and with state and federal agencies to intervene in other emergencies with public health significance (e.g., natural disasters).
- ✧ Implements health promotion programs.
- ✧ Engages the community to address public health issues.
- ✧ Develops partnerships with public and private healthcare providers and institutions, community-based organizations, and other government agencies (e.g., housing authority, criminal justice, education) engaged in services that affect health to collectively identify, alleviate, and act on the sources of public health problems.
- ✧ Coordinates the public health system's efforts in an intentional, non-competitive, and non-duplicative manner.



NATIONAL  
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HEALTH OFFICIALS



- Addresses health disparities.
- ✱ Serves as an essential resource for local governing bodies and policymakers on up-to-date public health laws and policies.
- ✱ Provides science-based, timely, and culturally competent health information and health alerts to the media and to the community.
- ✱ Provides its expertise to others who treat or address issues of public health significance.
- ✱ Ensures compliance with public health laws and ordinances, using enforcement authority when appropriate.
- ✱ Employs well-trained staff members who have the necessary resources to implement best practices and evidence-based programs and interventions.
- ✱ Facilitates research efforts, when approached by researchers, that benefit the community.
- ✱ Uses and contributes to the evidence base of public health.
- Strategically plans its services and activities, evaluates performance and outcomes, and makes adjustments as needed to continually improve its effectiveness, enhance the community's health status, and meet the community's expectations.



## NOTES

<sup>1</sup> For the purposes of this definition, a local health department may be locally governed, part of a region or district, be an office or an administrative unit of the state health department, or a hybrid of these.

<sup>2</sup> See "Local Health Department Standards," Pages 4 through 9, for further description of the functions captured in this definition.

All local health departments (LHDs),<sup>1</sup> as governmental entities, derive their authority and responsibility from the state and local laws that govern them. Accordingly, all LHDs exist for the common good and are responsible for demonstrating strong leadership in the promotion of physical, behavioral, environmental, social, and economic conditions that improve health and well-being; prevent illness, disease, injury, and premature death; and eliminate health disparities.<sup>2</sup> However, in the absence of specific, consistent standards regarding how LHDs fulfill this responsibility, the degree to which the public's health is protected and improved varies widely from community to community.

These standards describe the responsibilities that every person, regardless of where they live, should reasonably expect their LHD to fulfill. They have been developed within nationally recognized frameworks<sup>3</sup> and with input from public health professionals and elected officials<sup>4</sup> from across the country. The standards provide a framework by which LHDs are accountable to the state health department, the public they serve, and the governing bodies (e.g., local boards of health, county commissioners, and mayors) to which they report. In meeting the

standards, LHDs employ strategies that are evidence-based and informed by best practices, and they operate according to the highest level of professionalism and ethics to inspire public confidence and trust.

A number of factors contribute to the variability of how LHDs operate; specifically capacity, authority, resources, and composition of the local public health system:

- The LHD may have the capacity to perform all of the functions on its own; it may call upon the state to provide assistance for some functions; it may develop arrangements with other organizations in the community or with neighboring LHDs to perform some functions; or it may control the means by which other entities perform some functions.
- Government agencies other than the LHD may have the authority to perform services that affect public health.
- Resources for public health may be housed in a different agency.
- Each LHD jurisdiction is served by its own unique public health system: public and private health care providers, businesses, community organizations, academic institutions, and media outlets that all contribute to the public's health.

As a result of these differences, how LHDs meet the standards—whether they directly provide a service, broker particular capacities, or otherwise ensure that the necessary work is being done—will vary. Regardless of its specific capacity, authority, and resources, and regardless of the particular local public health system, the LHD has a consistent responsibility to intentionally coordinate all public health activities and lead efforts to meet the standards.

The standards are a guide to the fundamental responsibilities of LHDs, allowing for varied structural characteristics of LHDs (e.g., governance, staffing patterns, size of the population served, etc.), and recognizing that each LHD may have other duties unique to meeting the public health needs of the community it serves. Several states have developed, or are in the process of developing, state-specific standards for LHDs, and the National Public Health Performance Standards Program (NPHPSP) includes standards for local public health systems. NACCHO analyses of several state initiatives and the NPHPSP have shown a high level of consistency between these efforts and NACCHO's nationally-developed standards.

Currently, not all LHDs have the capacity to meet the standards. Many concerns have been raised regarding the costs of developing the capacity, and the implications for LHDs that do not meet the standards. It is difficult to anticipate costs, and it is equally important to understand that improvements in capacity can be made in the absence of new resources. NACCHO is committed to collecting and sharing models of LHDs and LHD arrangements to demonstrate various means to enhance local governmental public health capacity. Furthermore, NACCHO is currently participating in a national dialogue on whether to establish a voluntary national accreditation system for state and local health departments,<sup>5</sup> and is supportive of such an effort.<sup>6</sup> The results of this dialogue may generate implications for LHDs not meeting the standards.

NACCHO urges LHDs to embrace these standards both as a means of working with their state health departments, communities, and governing bodies to develop a more robust governmental public health capacity, and as a means of holding themselves uniformly accountable to the public they serve.

## **1 Monitor health status and understand health issues facing the community.**

- a. Obtain and maintain data that provide information on the community's health (e.g., provider immunization rates; hospital discharge data; environmental health hazard, risk, and exposure data; community-specific data; number of uninsured; and indicators of health disparities such as high levels of poverty, lack of affordable housing, limited or no access to transportation, etc.).
- b. Develop relationships with local providers and others in the community who have information on reportable diseases and other conditions of public health interest and facilitate information exchange.
- c. Conduct or contribute expertise to periodic community health assessments.
- d. Integrate data with health assessment and data collection efforts conducted by others in the public health system.
- e. Analyze data to identify trends, health problems, environmental health hazards, and social and economic conditions that adversely affect the public's health.

## **2 Protect people from health problems and health hazards.**

- a. Investigate health problems and environmental health hazards.
- b. Prevent, minimize, and contain adverse health events and conditions resulting from communicable diseases; food-, water-, and vector-borne outbreaks; chronic diseases; environmental hazards; injuries; and health disparities.
- c. Coordinate with other governmental agencies that investigate and respond to health problems, health disparities, or environmental health hazards.
- d. Lead public health emergency planning, exercises, and response activities in the community in accordance with the National Incident Management System, and coordinate with other local, state, and federal agencies.
- e. Fully participate in planning, exercises, and response activities for other emergencies in the community that have public health implications, within the context of state and regional plans and in a manner consistent with the community's best public health interest.
- f. Maintain access to laboratory and biostatistical expertise and capacity to help monitor community health status and diagnose and investigate public health problems and hazards.
- g. Maintain policies and technology required for urgent communications and electronic data exchange.

### 3 Give people information they need to make healthy choices.

- a. Develop relationships with the media to convey information of public health significance, correct misinformation about public health issues, and serve as an essential resource.
- b. Exchange information and data with individuals, community groups, other agencies, and the general public about physical, behavioral, environmental, social, economic, and other issues affecting the public's health.
- c. Provide targeted, culturally-appropriate information to help individuals understand what decisions they can make to be healthy.
- d. Provide health promotion programs to address identified health problems.

### 4 Engage the community to identify and solve health problems.

- a. Engage the local public health system in an ongoing, strategic, community-driven, comprehensive planning process to identify, prioritize, and solve public health problems; establish public health goals; and evaluate success in meeting the goals.
- b. Promote the community's understanding of, and advocacy for, policies and activities that will improve the public's health.
- c. Support, implement, and evaluate strategies that address public

health goals in partnership with public and private organizations.

- d. Develop partnerships to generate interest in and support for improved community health status, including new and emerging public health issues.
- e. Inform the community, governing bodies, and elected officials about governmental public health services that are being provided, improvements being made in those services, and priority health issues not yet being adequately addressed.

### 5 Develop public health policies and plans.

- a. Serve as a primary resource to governing bodies and policymakers to establish and maintain public health policies, practices, and capacity based on current science and best practices.
- b. Advocate for policies that lessen health disparities and improve physical, behavioral, environmental, social, and economic conditions in the community that affect the public's health.
- c. Engage in LHD strategic planning to develop a vision, mission, and guiding principles that reflect the community's public health needs, and to prioritize services and programs.

## **6 Enforce public health laws and regulations.**

- a. Review existing laws and regulations and work with governing bodies and policy-makers to update them as needed.
- b. Understand existing laws, ordinances, and regulations that protect the public's health.
- c. Educate individuals and organizations on the meaning, purpose, and benefit of public health laws, regulations, and ordinances and how to comply.
- d. Monitor, and analyze over time, the compliance of regulated organizations, entities, and individuals.
- e. Conduct enforcement activities.
- f. Coordinate notification of violations among other governmental agencies that enforce laws and regulations that protect the public's health.

## **7 Help people receive health services.**

- a. Engage the community to identify gaps in culturally-competent, appropriate, and equitable personal health services, including preventive and health promotion services, and develop strategies to close the gaps.
- b. Support and implement strategies to increase access to care and establish systems of personal health

services, including preventive and health promotion services, in partnership with the community.

- c. Link individuals to available, accessible personal healthcare providers (i.e., a medical home).

## **8 Maintain a competent public health workforce.**

- a. Recruit, train, develop, and retain a diverse staff.
- b. Evaluate LHD staff members' public health competencies,<sup>7</sup> and address deficiencies through continuing education, training, and leadership development activities.
- c. Provide practice- and competency-based educational experiences for the future public health workforce, and provide expertise in developing and teaching public health curricula, through partnerships with academia.
- d. Promote the use of effective public health practices among other practitioners and agencies engaged in public health interventions.
- e. Provide the public health workforce with adequate resources to do their jobs.

## **9 Evaluate and improve programs and interventions.**

- a. Develop evaluation efforts to assess health outcomes to the extent possible.
- b. Apply evidence-based criteria to evaluation activities where possible.
- c. Evaluate the effectiveness and quality of all LHD programs and

activities and use the information to improve LHD performance and community health outcomes.

- d. Review the effectiveness of public health interventions provided by other practitioners and agencies for prevention, containment, and/or remediation of problems affecting the public's health, and provide expertise to those interventions that need improvement.

## 10 Contribute to and apply the evidence base of public health.

- a. When researchers approach the LHD to engage in research activities that benefit the health of the community,
  - i. Identify appropriate populations, geographic areas, and partners;
  - ii. Work with them to actively involve the community in all phases of research;
  - iii. Provide data and expertise to support research; and,
  - iv. Facilitate their efforts to share research findings with the community, governing bodies, and policymakers.
- b. Share results of research, program evaluations, and best practices with other public health practitioners and academics.
- c. Apply evidence-based programs and best practices where possible.

## NOTES

<sup>1</sup> For the purposes of these standards, an LHD is defined as the governmental public health presence at the local level. It may be a locally governed health department, a branch of the state health department, a state-created district or region, a department governed by and serving a multi-county area, or any other arrangement that has governmental authority and is responsible for public health functions at the local level.

<sup>2</sup> For the purposes of this document, "health disparities" refer to differences in populations' health status that are avoidable and can be changed. These differences can result from social and/or economic conditions, as well as public policy. Examples include situations whereby hazardous waste sites are located in poor communities, there is a lack of affordable housing, and there is limited or no access to transportation. These and other factors adversely affect population health.

<sup>3</sup> The standards are framed around the Ten Essential Public Health Services, which have been reworded to more accurately reflect the specific LHD roles and responsibilities related to each category. In addition, these standards are consistent with the National Public Health Performance Standards Program (NPHPSP), serving to specify the role of governmental LHDs while the NPHPSP addresses the public health system as a whole.

<sup>4</sup> This includes those from local health departments, local boards of health, state health departments, and federal public health agencies; as well as county commissioners, mayors, state legislators, and gubernatorial health advisors.

<sup>5</sup> [www.exploringaccreditation.org](http://www.exploringaccreditation.org)

<sup>6</sup> NACCHO Resolution 04-06 further describes NACCHO's stance on accreditation.

<sup>7</sup> As defined by the Core Public Health Competencies developed by the Council on Linkages between Academia and Public Health Practice.

Public health professionals and the communities they serve deserve a common set of expectations about local health departments (LHDs). More than 600 governmental public health professionals and local and state officials representing 30 different states contributed to this definition, which will be a living document.

By describing the functions of LHDs, the definition will help citizens and residents understand what they can reasonably expect from governmental public health in their communities. The definition also will be useful to elected officials, who need to understand what LHDs do and how to hold them accountable. And, the definition will aid LHDs in obtaining their fair share of resources.



#### WHAT ARE NACCHO'S NEXT STEPS?

NACCHO's first step is education and communication about the definition with LHDs, local boards of health, state health departments, federal public health agencies, and local and state elected officials. Metrics will be developed to allow LHDs to measure their progress in achieving the standards.

NACCHO will also gather examples of how LHDs use the definition. The *Exploring Accreditation* project will examine the use of the standards as the basis for a voluntary national accreditation system for LHDs of all sizes and structures.

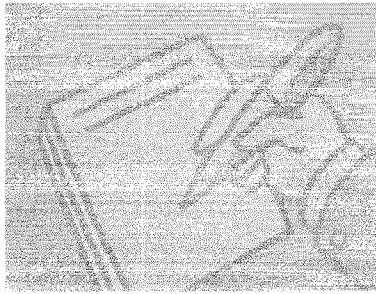
#### WHAT ACTION STEPS CAN YOU TAKE?

LHDs can use the definition and standards to assess local efforts, measure performance, expand functions, enhance activities, and communicate about the role of local public health to their governing bodies, elected officials, and community.

NACCHO has developed a set of three fact sheets describing the role of local public health and a communications toolkit as part of this project. Both the toolkit and the fact sheets are available on NACCHO's Web site (see the following column). We encourage LHDs to download the fact sheets and communications toolkit.



Finally, your experiences with the definition will inform and help shape the implementation phase of this effort. Please submit examples of how LHDs have met the definition (particularly those involving the development of shared capacity and/or resources), applied the tools in the communications toolkit, or otherwise used the definition or related materials.



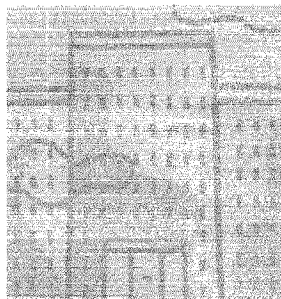
You can find additional materials and submit examples online at:

[www.naccho.org/topics/  
infrastructure/  
operationaldefinition.cfm](http://www.naccho.org/topics/infrastructure/operationaldefinition.cfm)

For more information about this project, please contact NACCHO at (202) 783-5550 and ask to speak with the Operational Definition program manager, or e-mail [operationaldefinition@naccho.org](mailto:operationaldefinition@naccho.org).

*NACCHO thanks the following organizations for their contributions to the development of the operational definition: the Association of State and Territorial Health Officials, the Association of State and Territorial Local Health Liaison Officials, the Centers for Disease Control and Prevention, the Health Resources and Services Administration, the National Association of Counties, the National Association of Local Boards of Health, the National Conference of State Legislatures, the National Governors Association, the National League of Cities, and the U.S. Conference of Mayors.*

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ISSUE REPORT

EXHIB. 3  
DATE 2/2/09  
HB 173

# Prevention for a Healthier America:

INVESTMENTS IN DISEASE PREVENTION  
YIELD SIGNIFICANT SAVINGS,  
STRONGER COMMUNITIES



JULY 2008

PREVENTING EPIDEMICS.  
PROTECTING PEOPLE.

 **Trust for  
America's Health**  
[WWW.HEALTHYAMERICANS.ORG](http://WWW.HEALTHYAMERICANS.ORG)



## ACKNOWLEDGEMENTS:

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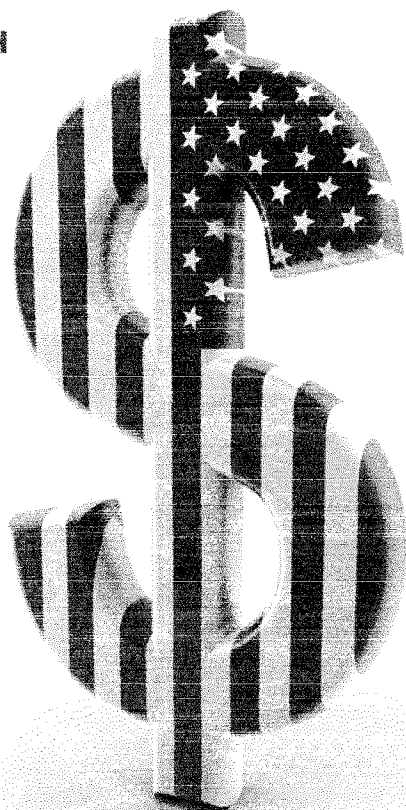


# Prevention for a Healthier America:

INVESTMENTS IN DISEASE PREVENTION  
YIELD SIGNIFICANT SAVINGS,  
STRONGER COMMUNITIES

## TRUST FOR AMERICA'S HEALTH

IS A NON-PROFIT, NON-PARTISAN  
ORGANIZATION DEDICATED TO  
SAVING LIVES BY PROTECTING THE  
HEALTH OF EVERY COMMUNITY  
AND WORKING TO MAKE DISEASE  
PREVENTION A NATIONAL PRIORITY.







# Introduction and Key Findings

## 1 SECTION

**E**ven though America spends more than \$2 trillion annually on health care -- more than any other nation in the world -- tens of millions of Americans suffer every day from preventable diseases like type 2 diabetes, heart disease, and some forms of cancer that rob them of their health and quality of life.<sup>1</sup>

Keeping people healthier is one of the most effective ways to reduce health care costs. This study, which was developed through a partnership of the Trust for America's Health (TFAH), The Urban Institute, The New York Academy of Medicine (NYAM), the Robert Wood Johnson Foundation (RWJF), The California Endowment (TCE), and Prevention Institute, examines how much the country could save in health care costs if we invested more in disease prevention, specifically by funding proven community-based programs that result in increased levels of physical activity, improved nutrition (both quality and quantity of food), and a reduction in smoking and other tobacco use rates.

The researchers found that if the country reduced type 2 diabetes and high blood pressure rates by 5 percent the country could save more than \$5 billion in health care costs; also reducing heart disease, kidney disease, and stroke prevalence by 5 percent could raise the savings to more than \$19 billion; and with additional 2.5 percent reductions in the prevalence of some forms of cancer, chronic obstructive pulmonary disease (COPD) and arthritis savings could increase to more than \$21 billion. A review of a range of evidence-based studies shows that proven community-based disease prevention programs can lead to improve-

ments in physical activity, nutrition, and preventing smoking and other tobacco use can lead to reductions of type 2 diabetes and high blood pressure by 5 percent in one to 2 years; heart disease, kidney disease, and stroke by 5 percent in 5 years; and some forms of cancer, COPD, and arthritis by 2.5 percent in 10 to 20 years. According to the literature, the per capita cost of many effective community-based programs is under \$10 per person per year.

**Therefore, TFAH concludes that an investment of \$10 per person per year in proven community-based disease prevention programs could yield net savings of more than \$2.8 billion annually in health care costs in one to 2 years, more than \$16 billion annually within 5 years, and nearly \$18 billion annually in 10 to 20 years (in 2004 dollars). With this level of investment, the country could recoup nearly \$1 over and above the cost of the program for every \$1 invested in the first one to 2 years of these programs, a return on investment (ROI) of 0.96. Within 5 years, the ROI could rise to 5.6 for every \$1 invested and rise to 6.2 within 10 to 20 years. This return on investment represents medical cost savings only and does not include the significant gains that could be achieved in worker productivity, reduced absenteeism at work and school, and enhanced quality of life.**

**NATIONAL RETURN ON INVESTMENT OF \$10 PER PERSON**  
(Net Savings in 2004 dollars)

	1-2 Years	5 Years	10-20 Years
<b>U.S. Total</b>	\$2,848,000,000	\$16,543,000,000	\$18,451,000,000
<b>ROI</b>	0.96:1	5.6:1	6.2:1



## RETURN ON INVESTMENT

In general, ROI compares the dollars invested in something to the benefits produced by that investment:

$$\text{ROI} = \frac{(\text{benefits of investment} - \text{amount invested})}{\text{amount invested}}$$

In the case of an investment in a prevention program, ROI compares the savings produced by the intervention, net of the cost of the program, to how much the program cost:

$$\text{ROI} = \frac{\text{net savings}}{\text{cost of intervention}}$$

When ROI equals 0, the program pays for itself. When ROI is greater than 0, then the program is producing savings that exceed the cost of the program.

The researchers evaluated 84 studies that met their criteria to develop the assumptions for the drops in disease rates and the costs of the programs. To be included in the review, the studies had to focus on:

- 1) Prevention programs that do not require medical treatment;
- 2) Programs that target communities rather than individuals; and
- 3) Evidence-based programs that have been shown to reduce disease through improving physical activity and nutrition and preventing smoking and other tobacco use in communities.

Examples of the types of studies include programs that:

- Keep schools open after hours where children can play with adult supervision;
- Provide access to fresh produce through farmers markets;
- Make nutritious foods more affordable and accessible in low-income areas;
- Require clear calorie and nutrition labeling of foods;
- Provide young mothers with information about how to make good choices about nutrition;

- Offer information and support for people trying to quit smoking and other tobacco use; and

- Raise cigarette and other tobacco tax rates.

*Note:* Additional examples can be found in the Methodology Section and a full list of all the studies is available in Appendix A: Bibliography of the Literature Review.

To build the model, the researchers evaluated:

- Which diseases can be affected by improving physical activity and nutrition and preventing smoking and other tobacco use;
- How effective programs are at reducing rates of disease;
- The range of estimated costs for these types of programs;
- The current rates of these diseases and current annual costs for treating these diseases; and
- The amount that could be saved if disease rates were reduced based on the estimates.

The project researchers built this model to yield **conservative estimates** for savings – using low-end assumptions for the impact of these programs on disease rates and high-end



assumptions for the costs of the programs. In addition, the health savings costs in this model are in 2004 dollars and do not include spending in nursing homes, which is significant for these conditions. They also assumed the programs would only result in a one-time reduction in the prevalence of each disease. For instance, they assumed type 2 diabetes rates would only drop once even though the programs would continue over time and it is likely the rates would continue to drop as the programs continued over the years. This assumption helps take into account the possibility that some people may backslide while others may continue to improve.

The model also does not take into account potential savings for increases in worker productivity, which could be significant. For example, smoking-caused productivity losses currently total more than \$90 billion per year, not even including the losses from smokers taking more sick days than nonsmokers.<sup>2</sup> Nor does it take into account the effect of the prevention programs on other health conditions that might be reduced as a result of these interventions (e.g., increasing exercise improves heart health as well as risk of injury due to falling).

For more details on the methodology, see Section 4.

### ROI FOR PAYERS: MEDICARE, MEDICAID, AND PRIVATE INSURERS

In addition to total dollars saved, the study looked at how this investment could benefit different health care payers.

Medicare could save more than \$487 million annually in the first one to 2 years, more than \$5.2 billion annually within 5 years, and nearly \$5.9 billion annually in 10 to 20 years.

Annually, Medicaid could save \$370 million annually in the first one to 2 years, some \$1.9 billion annually within 5 years, and more than \$2 billion annually in 10 to 20 years.

And, annually private insurers and individuals (through reductions of out-of-pocket costs) could see the biggest savings, with nearly \$2 billion annually in the first one to 2 years, more than \$9 billion annually within 5 years, and more than \$10 billion annually in 10 to 20 years.

#### Net Savings By Medicare, Medicaid, And Private Insurers For An Investment Of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Medicare, U.S. Total</b>	\$487,000,000	\$5,213,000,000	\$5,971,000,000
<b>Medicaid, U.S. Total</b>	\$370,000,000	\$1,951,000,000	\$2,195,000,000
<b>Other payers and out-of-pocket, U.S. Total</b>	\$1,991,000,000	\$9,380,000,000	\$10,285,000,000

\* In 2004 dollars, net savings

## A HEALTHIER AND LESS COSTLY LIFE: NOT JUST DEFERRING COSTS TO END OF LIFE

The return on investment for community-based disease prevention programs does not just defer high health care costs to the end of life. By increasing physical activity and good nutrition and decreasing smoking and other tobacco use, we are ensuring that more people will be healthier for longer periods of their life.

Being healthier throughout their lifetimes, these individuals might avoid developing complications or compounding conditions that may develop if they are less healthy (e.g., gain too much weight, are physically inactive, or practice poor nutrition).

A recent study by Lakdawalla, Goldman, and Shang in *Health Affairs* demonstrated that obese and non-obese people have similar life expectan-

cies, but the health care costs of an obese person will be significantly higher than a non-obese person over the course of a lifetime. Therefore, higher costs are not offset by reduced longevity. Obese people also have "fewer disability-free life years and experience higher rates of diabetes, hypertension, and heart disease."<sup>3</sup>

As one example, a person who is obese has a higher risk for needing a knee replacement. If the obesity is prevented, the need -- and cost -- for a knee replacement may be delayed or avoided altogether.

Also, studies have found that smokers, on average, have significantly higher health care costs than non-smokers, but smokers dying sooner does not save money.<sup>4,5</sup>

Scientists refer to this effect as "compression of morbidity," which means extending healthy life expectancy more than total life expectancy. Chronic disease and disability are compressed into a smaller portion of a person's life -- and his or her lifelong health care management costs are lower and quality of life is improved.<sup>6,7</sup>

## DIFFERENT TYPES OF PREVENTION EFFORTS YIELD DIFFERENT RETURNS

A number of studies have examined whether prevention efforts result in cost savings in addition to helping people be healthier. A February 2008 article, "Does Preventive Care Save Money? Health Economics and the Presidential Candidates," in *The New England Journal of Medicine (NEJM)* reviewed a wide range of studies looking at the potential cost-savings for prevention programs and noted that "studies have concluded that preventing illness can in some cases save money but in other cases can add to health care costs."<sup>8</sup>

There are 3 types of prevention: primary, secondary, and tertiary. Primary prevention involves taking action before a problem arises in order to avoid it entirely, rather than treating or alleviating its consequences. Primary prevention can include clinical interventions, such as specific immunizations, and broader public health interventions, such as clean water and sewage systems; fortification of food with specific nutrients, such as folic acid; and protection from carcinogens, such as second-hand tobacco smoke.

Secondary prevention is a set of measures used for early detection and prompt intervention to control a problem or disease and minimize the consequences, while tertiary preven-

tion focuses on the reduction of further complications of an existing disease or problem, through treatment and rehabilitation.<sup>9</sup>

Many factors influence whether specific prevention efforts result in cost-savings. For instance, prevention efforts involving direct medical treatment or pharmaceuticals often have higher costs. These "tertiary" prevention measures are aimed at trying to reverse a condition or prevent it from getting worse. "Secondary" prevention efforts, which include early detection and prompt intervention to control a problem or disease and minimize the consequences of a disease, are more cost-effective if they are targeted to at-risk populations. In addition, the *NEJM* authors acknowledged that there are prevention programs that are not implemented on a wide enough scale to determine whether they could bring about "substantial aggregate improvements in health at an acceptable cost."<sup>10</sup>

The TFAH model is based on studies of strategic low-cost, community-based primary and secondary prevention efforts that have demonstrated results in lowering disease rates or improving health choices, but do not involve direct medical care.

# Current Health and Economic Costs

## ASSOCIATED WITH PHYSICAL INACTIVITY, POOR NUTRITION, AND SMOKING AND OTHER TOBACCO USE

# 2

SECTION

ACCORDING TO MCKINSEY & COMPANY AS OF 2008, "THE AVERAGE FORTUNE 500 COMPANY WILL SPEND AS MUCH ON HEALTH CARE AS THEY MAKE IN PROFIT. HOW CAN WE POSSIBLY COMPETE IN THE GLOBAL ECONOMY WITH THAT KIND OF BURDEN?"<sup>11</sup>

— ANDY STERN, PRESIDENT OF THE SERVICE EMPLOYEES INTERNATIONAL UNION (SEIU)

"IF WE CAN CREATE A HEALTH CARE PLAN THAT CONTAINS COSTS OR DRIVES THEM DOWN, THAT IMPROVES THE HEALTH OF THE EMPLOYEE AND EXTENDS THEIR LIFE, AND AVOIDS CATASTROPHIC ILLNESS AND DOESN'T COST THEM ANY MORE MONEY, WHY WOULD ANYONE QUARREL WITH THAT PLAN?"<sup>12</sup>

— STEVEN BURD, CHIEF EXECUTIVE OFFICER OF SAFEWAY

General Motors (GM) estimates it pays \$1,500 per car produced in health care coverage costs to employees and retirees (more than it pays for steel), and these costs are passed onto the consumer. In addition, GM claims that rising health care costs were a critical factor in the decision to cut 25,000 jobs (a cut that can impact up to 175,000 jobs in other sectors of the economy).<sup>13, 14</sup>

America's future economic well-being is inextricably tied to our health. Helping Americans stay healthier is the best way to drive down health care costs and ensure our workforce is competitive in the global economy.

The skyrocketing costs of health care are hurting the U.S. economy. Health care costs are more than 3 times higher than in 1990 and more than 8 times higher than in 1980.<sup>15</sup>

Poor health is putting our economic security in jeopardy. High health care costs are undermining business profits, causing some companies to relocate jobs overseas where costs are lower and productivity is higher.

And if we invest more in keeping Americans healthy, not only will we spare millions of people from needless suffering, we will also save the country billions of dollars.

Right now, however, America's health care system is set up to focus on treating people once they have a health problem. Some experts describe this as "sick care" instead of health care.

The country will never be able to contain health care costs until we start focusing on how to prevent people from getting sick in the first place, putting an emphasis on improving the choices we make that affect



our risk for preventable diseases. Experts widely agree that 3 of the most important factors that influence our health are:

- 1) Physical activity;
- 2) Nutrition (including eating foods of high nutritional value and in the right quantities); and
- 3) Whether or not we smoke.

As a nation, if we develop strategies and programs that help more Americans become physically active, practice good nutrition, and stop smoking and other tobacco use (while also helping our youth from ever starting smoking or other unhealthy practices), we could have a tremendous payoff both in improving health and reducing health care costs.

### MAJOR FACTORS IN U.S. HEALTH: LACK OF PHYSICAL ACTIVITY, POOR NUTRITION, AND SMOKING AND TOBACCO USE

In the past 3 decades, the health of Americans has changed dramatically. Adult obesity rates have doubled since 1980, and childhood obesity rates have tripled.<sup>16</sup> Two-thirds of adults are either overweight or obese.<sup>17</sup> The childhood obesity epidemic is putting today's youth on course to possibly be the first generation to live shorter, less healthy lives than their parents.<sup>18</sup> In addition, after years of declines, smoking rates have leveled off, with 21 percent of adults and 20 percent of high school students continuing to smoke.<sup>19, 20, 21</sup> Obesity and smoking put people at significantly higher risk for developing serious and costly diseases.

#### Current Health Statistics

Right now, more than half of Americans live with one or more chronic disease, such as heart disease, stroke, diabetes, or cancer.<sup>22</sup>

- One in 4 Americans has heart disease, one in 3 has high blood pressure.<sup>23</sup>
- Twenty-four million Americans have type 2 diabetes, and another 54 million are pre-diabetic, at high risk for developing type 2 diabetes.<sup>24, 25, 26</sup> An estimated 2 million adolescents have pre-diabetes.<sup>27</sup>

The risks of developing heart disease, stroke, and kidney disease are exponentially higher if a person is both obese and a smoker. There are other conditions related to activity, nutrition, and smoking, but combined, these sets of diseases are the most common and costly.

#### Diseases Related to Physical Inactivity and Poor Nutrition

People who do not engage in adequate physical activity, have poor nutrition habits, and/or are obese are at increased risk for type 2 diabetes, high blood pressure (hypertension), heart disease, stroke, kidney disease, some forms of cancer, arthritis, and chronic obstructive pulmonary disease (COPD).<sup>28</sup>

- More than 75 percent of high blood pressure cases can be attributed to obesity.<sup>29</sup>
- Over time, type 2 diabetes and high blood pressure put people at increased risk for developing even more serious conditions, including heart disease, stroke, or kidney disease.
- Other obese or inactive individuals can also develop heart disease, stroke, or kidney disease without first being diabetic or hypertensive.
- Approximately 20 percent of cancer in women and 15 percent of cancer in men can be attributed to obesity.<sup>30</sup>
- Obesity is a known risk factor for the development and progression of knee osteoarthritis and possibly osteoarthritis of other joints. For example, obese adults are up to 4 times more likely to develop knee osteoarthritis than normal weight adults.<sup>31</sup> Among individuals who have received a doctor's diagnosis of arthritis 68.8 percent are overweight or obese.<sup>32</sup> For every pound of body weight lost, there is a 4-pound reduction in knee joint stress among overweight and obese people with osteoarthritis of the knee.<sup>33</sup>

### **Financial Costs of Obesity, Physical Inactivity, and Poor Nutrition**

- More than one quarter of America's health care costs are related to obesity.<sup>34, 35</sup> Health care costs of obese workers are up to 21 percent higher than non-obese workers.<sup>36</sup> Obese and physically inactive workers also suffer from lower worker productivity, increased absenteeism, and higher workers' compensation claims.<sup>37</sup>
- The Minnesota Department of Health estimates physical inactivity costs the state approximately \$100 per person (year 2000 costs), at a total of \$495 million in direct costs (\$383 million in hospital, outpatient, and professional expenses and \$112 million for outpatient prescription drugs.)<sup>38</sup> BlueCross BlueShield of Minnesota found that 31 percent of its heart disease, stroke, colon cancer, and osteoporosis costs were due to physical inactivity -- about \$84 million in 2000, which was \$56 per member, regardless of their level of activity.<sup>39</sup> Canadian researchers estimate that Canada could save \$150 million per year of the \$2.1 billion it currently spends on health care costs related to physical inactivity (25 percent of costs of coronary artery disease, stroke, hypertension, colon cancer, breast cancer, type 2 diabetes, and osteoporosis) if activity levels were increased by 10 percent.<sup>40</sup>

### **Current Physical Activity and Nutrition Falls Short of National Goals**

- The percent of adults who do not engage in any form of physical activity ranges from 15.7 percent in Minnesota to 31.8 percent in Mississippi, and many more do not engage in the recommended levels.<sup>41</sup>
- Many Americans are eating larger quantities of food than is healthy and they are often consuming foods with low nutritional value. On average, we consume approximately 300 more calories daily than Americans did in 1985.<sup>42</sup>
- The U.S. Department of Agriculture (USDA) reports that America's fruit and vegetable consumption is "woefully low" and is limited to only a small range of potential options.<sup>43</sup>
- Since the 1980s, sugar and fat consumption has dramatically increased while whole grains and milk consumption has dropped.<sup>44, 45</sup>

### **Diseases Related To Smoking**

Smoking harms nearly every organ in the body.<sup>46</sup>

- Smoking causes the vast majority of all deaths from lung cancer.
- Smoking is a major cause of heart disease, cerebrovascular disease, chronic bronchitis and emphysema.<sup>47</sup>
- Smoking is a known cause of cancer of the lung, larynx, oral cavity, bladder, pancreas, uterus, cervix, kidney, stomach and esophagus.<sup>48</sup>

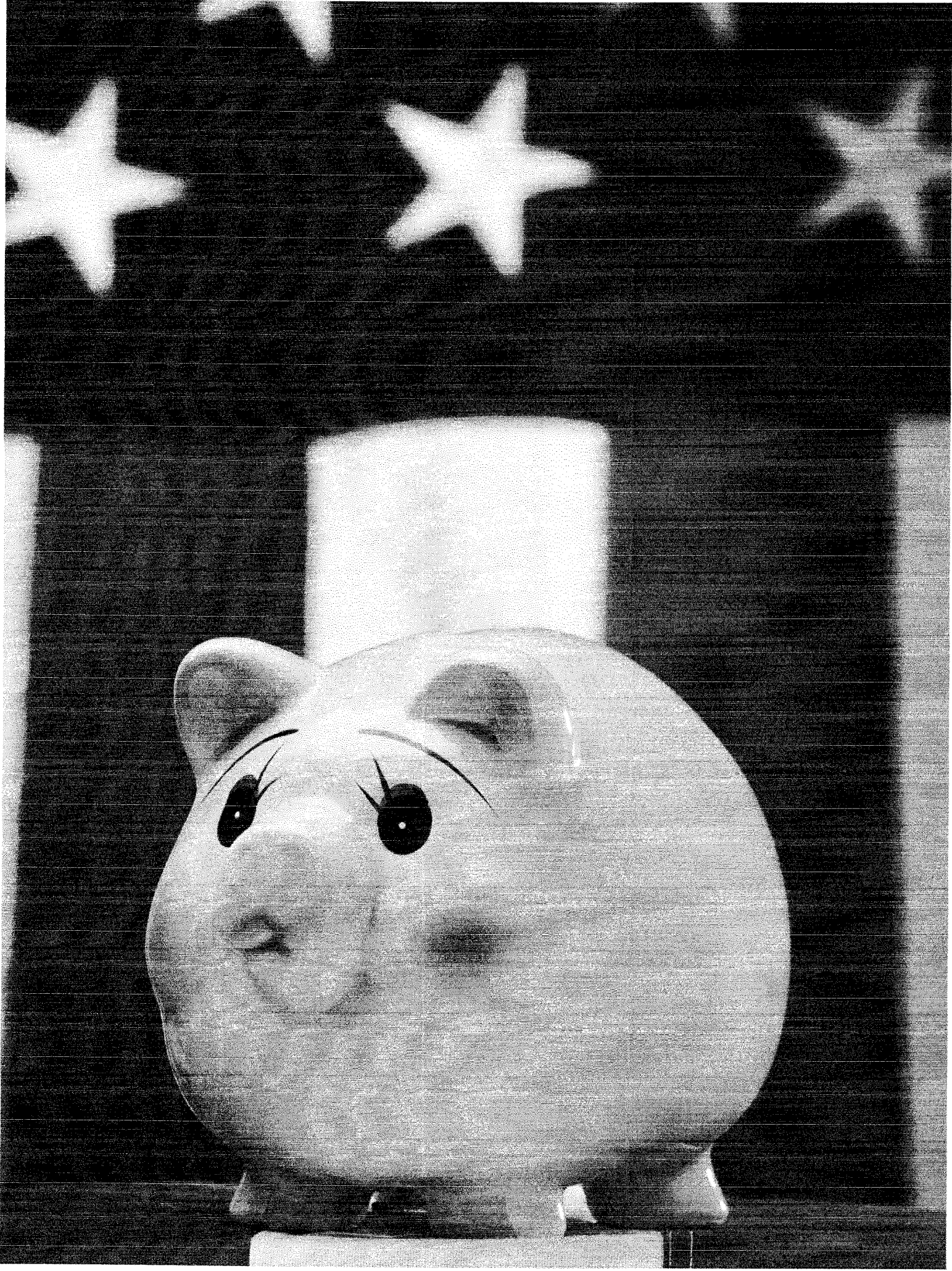
### **Financial Costs of Smoking**

- Tobacco use costs the U.S. more than \$180 billion annually in health care bills and lost productivity.<sup>49</sup> Lifetime health care costs for individuals who smoke are \$17,500 higher than for those who do not smoke.<sup>50</sup>

### **Current Smoking Rates Fall Short of National Goals**

- Despite progress over the past decade, every single day more than 1,000 new kids become regular, daily smokers while another 4,000 kids try their first cigarette.<sup>51</sup>





# State-By-State ROI

## 3 SECTION

**T**his section examines how much states could save if we invested \$10 per person in strategic community-based disease prevention programs aimed at improving physical activity and nutrition and preventing smoking and other tobacco use.

The estimates in this section characterize likely relative magnitudes of the savings states could realize from well-designed community-level programs implemented statewide. These estimates should be considered preliminary for two reasons. First, they are based on the estimated national proportions of spending attributable to persons with intervention-amenable diseases applied to state data on spending by payer reported by CMS.<sup>32</sup> TFAH calculated them using preliminary estimates of savings by state and payer produced by Urban Institute researchers. The estimates do not take into account differences in state population characteristics, such as the distribution by age and ethnicity, disease prevalence, or environmental characteristics, such as urban/rural population distribution, which can have a significant effect on costs and savings. For example, state prevalences range from 4 percent to 9.8 percent for diabetes, 20 percent to 32.5 percent for hypertension, and 24 percent to 37.3 percent for high cholesterol.<sup>33</sup>

Second, community-based interventions target entire communities. Health insurance coverage in most communities is mixed with some people covered by private insurance and others by Medicaid or Medicare. Some community residents are uninsured. Disease patterns also vary by community and these patterns may be associated with insurance coverage, as in the case of age and Medicare coverage. Distribution of costs of program interventions to different payers across the community is, therefore, not straightforward. While the reductions in medical expenditures can be assigned to specific payers, costs of the intervention are not assignable.

The federal and state governments share the costs of Medicaid, however, each state pays a different percentage share. The following state charts reflect the proportions that the federal and state governments pay in each state based on their percentage share according to the data in the Kaiser Family Foundation's [www.statehealthfacts.org](http://www.statehealthfacts.org) "Federal and State Share of Medicaid Spending, FY 2006."





## Alabama

Total Annual Intervention Costs (at \$10 per person): \$45,170,000

### Alabama Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$87,800,000	\$295,700,000	\$324,700,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$42,600,000	\$250,600,000	\$279,500,000
<b>ROI for State</b>	0.94:1	5.55:1	6.19:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$11,500,000	\$67,600,000	\$75,400,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$2,870,000	\$16,800,000	\$18,800,000
Medicaid Net Savings (state share) (proportion of net savings)	\$1,260,000	\$7,410,000	\$8,270,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$27,000,000	\$158,600,000	\$176,900,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Alaska

Total Annual Intervention Costs (at \$10 per person): \$6,570,000

### Alaska Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$16,000,000	\$53,800,000	\$59,100,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$9,430,000	\$47,300,000	\$52,500,000
<b>ROI for State</b>	1.44:1	7.20:1	8.01:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$2,540,000	\$12,700,000	\$14,200,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$459,000	\$2,300,000	\$2,560,000
Medicaid Net Savings (state share) (proportion of net savings)	\$455,000	\$2,280,000	\$2,540,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$5,970,000	\$29,900,000	\$33,200,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.



## Arizona

Total Annual Intervention Costs (at \$10 per person): \$57,460,000

### Arizona Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$89,000,000	\$299,700,000	\$329,100,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$31,500,000	\$242,200,000	\$271,600,000
<b>ROI for State</b>	0.55:1	4.22:1	4.73:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$8,510,000	\$65,400,000	\$73,300,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$2,050,000	\$15,700,000	\$17,600,000
Medicaid Net Savings (state share) (proportion of net savings)	\$1,010,000	\$7,750,000	\$8,690,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$19,900,000	\$153,300,000	\$171,900,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Arkansas

Total Annual Intervention Costs (at \$10 per person): \$27,470,000

### Arkansas Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$49,600,000	\$167,100,000	\$183,500,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$22,100,000	\$139,600,000	\$156,000,000
<b>ROI for State</b>	0.81:1	5.09:1	5.68:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$5,980,000	\$37,700,000	\$42,100,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$1,580,000	\$10,000,000	\$11,100,000
Medicaid Net Savings (state share) (proportion of net savings)	\$563,000	\$3,550,000	\$3,960,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$14,000,000	\$88,400,000	\$98,700,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

California			
Total Annual Intervention Costs (at \$10 per person): \$358,410,000			
California Return on Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$621,400,000	\$2,092,700,000	\$2,297,700,000
<b>State Net Savings (Net savings = Total savings minus intervention costs)</b>	\$262,900,000	\$1,734,300,000	\$1,939,300,000
<b>ROI for State</b>	0.73:1	4.84:1	5.41:1
* In 2004 dollars			
Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$71,000,000	\$468,200,000	\$523,600,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$12,700,000	\$84,100,000	\$94,000,000
Medicaid Net Savings (state share) (proportion of net savings)	\$12,700,000	\$84,100,000	\$94,000,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$166,400,000	\$1,097,800,000	\$1,227,600,000
* In 2004 dollars			
* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.			

Colorado			
Total Annual Intervention Costs (at \$10 per person): \$45,990,000			
Colorado Return on Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$82,600,000	\$278,300,000	\$305,600,000
<b>State Net Savings (Net savings = Total savings minus intervention costs)</b>	\$36,600,000	\$232,300,000	\$259,600,000
<b>ROI for State</b>	0.80:1	5.05:1	5.65:1
* In 2004 dollars			
Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$9,890,000	\$62,700,000	\$70,100,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$1,770,000	\$11,200,000	\$12,500,000
Medicaid Net Savings (state share) (proportion of net savings)	\$1,770,000	\$11,200,000	\$12,500,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$23,200,000	\$147,000,000	\$164,300,000
* In 2004 dollars			
* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.			

## Connecticut

Total Annual Intervention Costs (at \$10 per person): \$34,940,000

### Connecticut Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$79,100,000	\$266,400,000	\$292,500,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$44,100,000	\$231,500,000	\$257,600,000
<b>ROI for State</b>	1.26:1	6.63:1	7.37:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$11,900,000	\$62,500,000	\$69,500,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$2,140,000	\$11,200,000	\$12,400,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,140,000	\$11,200,000	\$12,400,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$27,900,000	\$146,500,000	\$163,000,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Delaware

Total Annual Intervention Costs (at \$10 per person): \$8,290,000

### Delaware Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$19,500,000	\$65,800,000	\$72,300,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$11,200,000	\$57,500,000	\$64,000,000
<b>ROI for State</b>	1.36:1	6.95:1	7.72:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$3,040,000	\$15,500,000	\$17,200,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$547,000	\$2,790,000	\$3,110,000
Medicaid Net Savings (state share) (proportion of net savings)	\$545,000	\$2,780,000	\$3,090,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$7,130,000	\$36,400,000	\$40,500,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.



<b>Washington D.C.</b>			
Total Annual Intervention Costs (at \$10 per person): \$5,800,000			
<b>D.C. Return on Investment of \$10 Per Person</b>			
	<b>1-2 Years</b>	<b>5 Years</b>	<b>10-20 Years</b>
<b>Total State Savings</b>	\$18,700,000	\$63,000,000	\$69,100,000
<b>State Net Savings (Net savings = Total savings minus intervention costs)</b>	\$12,900,000	\$57,200,000	\$63,300,000
<b>ROI for State</b>	2.23:1	9.86:1	10.93:1
* In 2004 dollars			
<b>Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person</b>			
	<b>1-2 Years</b>	<b>5 Years</b>	<b>10-20 Years</b>
Medicare Net Savings (proportion of net savings)	\$3,480,000	\$15,400,000	\$17,100,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$876,000	\$3,880,000	\$4,300,000
Medicaid Net Savings (state share) (proportion of net savings)	\$375,000	\$1,660,000	\$1,840,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$8,170,000	\$36,200,000	\$40,100,000
* In 2004 dollars			
* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.			

<b>Florida</b>			
Total Annual Intervention Costs (at \$10 per person): \$173,670,000			
<b>Florida Return on Investment of \$10 Per Person</b>			
	<b>1-2 Years</b>	<b>5 Years</b>	<b>10-20 Years</b>
<b>Total State Savings</b>	\$369,700,000	\$1,245,300,000	\$1,367,300,000
<b>State Net Savings (Net savings = Total savings minus intervention costs)</b>	\$196,100,000	\$1,071,600,000	\$1,193,600,000
<b>ROI for State</b>	1.13:1	6.17:1	6.87:1
* In 2004 dollars			
<b>Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person</b>			
	<b>1-2 Years</b>	<b>5 Years</b>	<b>10-20 Years</b>
Medicare Net Savings (proportion of net savings)	\$52,900,000	\$289,300,000	\$322,200,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$11,200,000	\$61,200,000	\$68,100,000
Medicaid Net Savings (state share) (proportion of net savings)	\$7,810,000	\$42,700,000	\$47,500,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$124,100,000	\$678,300,000	\$755,500,000
* In 2004 dollars			
* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.			

## Georgia

Total Annual Intervention Costs (at \$10 per person): \$89,350,000

### Georgia Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$153,100,000	\$515,700,000	\$566,200,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$63,700,000	\$426,300,000	\$476,900,000
<b>ROI for State</b>	0.71:1	4.77:1	5.34:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$17,200,000	\$115,100,000	\$128,700,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$3,740,000	\$25,000,000	\$28,000,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,430,000	\$16,200,000	\$18,200,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$40,300,000	\$269,900,000	\$301,800,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Hawaii

Total Annual Intervention Costs (at \$10 per person): \$12,590,000

### Hawaii Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$24,500,000	\$82,600,000	\$90,700,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$11,900,000	\$70,100,000	\$78,200,000
<b>ROI for State</b>	0.95:1	5.57:1	6.21:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$3,230,000	\$18,900,000	\$21,100,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$682,000	\$3,990,000	\$4,460,000
Medicaid Net Savings (state share) (proportion of net savings)	\$478,000	\$2,800,000	\$3,120,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$7,570,000	\$44,300,000	\$49,500,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

Idaho			
Total Annual Intervention Costs (at \$10 per person): \$13,950,000			
Idaho Return on Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$22,600,000	\$76,200,000	\$83,700,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$8,690,000	\$62,300,000	\$69,700,000
<b>ROI for State</b>	0.62:1	4.47:1	5.00:1
* In 2004 dollars			
Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$2,340,000	\$16,800,000	\$18,800,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$589,000	\$4,220,000	\$4,730,000
Medicaid Net Savings (state share) (proportion of net savings)	\$253,000	\$1,810,000	\$2,030,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$5,500,000	\$39,400,000	\$44,100,000
* In 2004 dollars			
* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.			

Illinois			
Total Annual Intervention Costs (at \$10 per person): \$127,140,000			
Illinois Return on Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$247,900,000	\$835,200,000	\$917,000,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$120,800,000	\$708,000,000	\$789,800,000
<b>ROI for State</b>	0.95:1	5.57:1	6.21:1
* In 2004 dollars			
Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$32,600,000	\$191,100,000	\$213,200,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$5,860,000	\$34,300,000	\$38,300,000
Medicaid Net Savings (state share) (proportion of net savings)	\$5,860,000	\$34,300,000	\$38,300,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$76,500,000	\$448,200,000	\$499,900,000
* In 2004 dollars			
* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.			



## Indiana

Total Annual Intervention Costs (at \$10 per person): \$62,230,000

### Indiana Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$120,400,000	\$405,500,000	\$445,200,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$58,100,000	\$343,300,000	\$383,000,000
<b>ROI for State</b>	0.94:1	5.52:1	6.16:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$15,700,000	\$92,600,000	\$103,400,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$3,550,000	\$20,900,000	\$23,400,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,080,000	\$12,300,000	\$13,700,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$36,800,000	\$217,300,000	\$242,400,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Iowa

Total Annual Intervention Costs (at \$10 per person): \$29,540,000

### Iowa Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$57,900,000	\$195,100,000	\$214,300,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$28,400,000	\$165,600,000	\$184,700,000
<b>ROI for State</b>	0.96:1	5.61:1	6.26:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$7,670,000	\$44,700,000	\$49,800,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$1,750,000	\$10,200,000	\$11,300,000
Medicaid Net Savings (state share) (proportion of net savings)	\$1,000,000	\$5,800,000	\$6,520,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$17,900,000	\$104,800,000	\$116,900,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Kansas

Total Annual Intervention Costs (at \$10 per person): \$27,380,000

### Kansas Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$54,300,000	\$182,900,000	\$200,800,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$26,900,000	\$155,500,000	\$173,400,000
<b>ROI for State</b>	0.98:1	5.68:1	6.34:1

\* In 2004 dollars

### Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$7,270,000	\$41,900,000	\$46,800,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$1,570,000	\$9,110,000	\$10,100,000
Medicaid Net Savings (state share) (proportion of net savings)	\$1,030,000	\$5,970,000	\$6,660,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$17,000,000	\$98,400,000	\$109,700,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Kentucky

Total Annual Intervention Costs (at \$10 per person): \$41,400,000

### Kentucky Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$86,200,000	\$290,300,000	\$318,700,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$44,800,000	\$248,900,000	\$277,300,000
<b>ROI for State</b>	1.08:1	6.01:1	6.70:1

\* In 2004 dollars

### Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$12,000,000	\$67,200,000	\$74,800,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$3,010,000	\$16,700,000	\$18,600,000
Medicaid Net Savings (state share) (proportion of net savings)	\$1,330,000	\$7,410,000	\$8,250,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$28,300,000	\$157,500,000	\$175,500,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.



## Louisiana

Total Annual Intervention Costs (at \$10 per person): \$44,960,000

### Louisiana Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$83,000,000	\$279,800,000	\$307,200,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$38,100,000	\$234,800,000	\$262,200,000
<b>ROI for State</b>	0.85:1	5.22:1	5.83:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$10,200,000	\$63,400,000	\$70,800,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$2,580,000	\$15,900,000	\$17,700,000
Medicaid Net Savings (state share) (proportion of net savings)	\$1,110,000	\$6,870,000	\$7,680,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$24,100,000	\$148,600,000	\$166,000,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Maine

Total Annual Intervention Costs (at \$10 per person): \$13,140,000

### Maine Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$33,200,000	\$111,900,000	\$122,800,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$20,100,000	\$98,700,000	\$109,700,000
<b>ROI for State</b>	1.53:1	7.52:1	8.35:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$5,420,000	\$26,600,000	\$29,600,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$1,220,000	\$6,020,000	\$6,690,000
Medicaid Net Savings (state share) (proportion of net savings)	\$723,000	\$3,550,000	\$3,940,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$12,700,000	\$62,500,000	\$69,400,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Maryland

Total Annual Intervention Costs (at \$10 per person): \$55,530,000

### Maryland Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$115,100,000	\$387,800,000	\$425,800,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$59,600,000	\$332,200,000	\$370,200,000
<b>ROI for State</b>	1.07:1	5.98:1	6.67:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$16,000,000	\$89,700,000	\$99,900,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$2,890,000	\$16,100,000	\$17,900,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,890,000	\$16,100,000	\$17,900,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$37,700,000	\$210,300,000	\$234,300,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Massachusetts

Total Annual Intervention Costs (at \$10 per person): \$64,360,000

### Massachusetts Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$160,500,000	\$540,800,000	\$593,700,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$96,200,000	\$476,400,000	\$529,300,000
<b>ROI for State</b>	1.50:1	7.40:1	8.23:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$25,900,000	\$128,600,000	\$142,900,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$4,660,000	\$23,100,000	\$25,600,000
Medicaid Net Savings (state share) (proportion of net savings)	\$4,660,000	\$23,100,000	\$25,600,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$60,900,000	\$301,500,000	\$335,100,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Michigan

Total Annual Intervention Costs (at \$10 per person): \$100,930,000

### Michigan Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$191,900,000	\$646,300,000	\$709,600,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$90,900,000	\$545,400,000	\$60,800,000
<b>ROI for State</b>	0.90:1	5.40:1	6.03:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$24,500,000	\$147,200,000	\$164,300,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$4,990,000	\$29,900,000	\$33,400,000
Medicaid Net Savings (state share) (proportion of net savings)	\$3,830,000	\$22,900,000	\$25,600,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$57,500,000	\$345,200,000	\$385,300,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Minnesota

Total Annual Intervention Costs (at \$10 per person): \$50,940,000

### Minnesota Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$109,200,000	\$367,800,000	\$403,900,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$58,200,000	\$316,900,000	\$352,900,000
<b>ROI for State</b>	1.14:1	6.22:1	6.93:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$15,700,000	\$85,500,000	\$95,300,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$2,820,000	\$15,300,000	\$17,100,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,820,000	\$15,300,000	\$17,100,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$36,900,000	\$200,600,000	\$223,400,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.



## Mississippi

Total Annual Intervention Costs (at \$10 per person): \$28,930,000

### Mississippi Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$53,200,000	\$179,400,000	\$196,900,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$24,300,000	\$150,400,000	\$168,000,000
<b>ROI for State</b>	0.84:1	5.20:1	5.81:1

\* In 2004 dollars

### Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$6,570,000	\$40,600,000	\$45,300,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$1,790,000	\$11,000,000	\$12,300,000
Medicaid Net Savings (state share) (proportion of net savings)	\$566,000	\$3,500,000	\$3,910,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$15,400,000	\$95,200,000	\$106,300,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Missouri

Total Annual Intervention Costs (at \$10 per person): \$57,530,000

### Missouri Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$116,400,000	\$392,100,000	\$430,500,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$58,900,000	\$334,600,000	\$373,000,000
<b>ROI for State</b>	1.02:1	5.82:1	6.49:1

\* In 2004 dollars

### Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$15,900,000	\$90,300,000	\$100,700,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$3,530,000	\$20,000,000	\$22,300,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,170,000	\$12,300,000	\$13,700,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$37,200,000	\$211,800,000	\$236,100,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Montana

Total Annual Intervention Costs (at \$10 per person): \$9,260,000

### Montana Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$17,900,00	\$60,300,000	\$66,200,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$8,650,000	\$51,000,000	\$56,900,000
<b>ROI for State</b>	0.94:1	5.52:1	6.16:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$2,330,000	\$13,700,000	\$15,300,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$592,000	\$3,490,000	\$3,890,000
Medicaid Net Savings (state share) (proportion of net savings)	\$247,000	\$1,460,000	\$1,630,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$5,480,000	\$32,300,000	\$36,000,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Nebraska

Total Annual Intervention Costs (at \$10 per person): \$17,470,000

### Nebraska Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$35,500,000	\$119,700,000	\$131,500,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$18,100,000	\$102,300,000	\$114,000,000
<b>ROI for State</b>	1.04:1	5.86:1	6.53:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$4,880,000	\$27,600,000	\$30,700,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$1,040,000	\$5,920,000	\$6,600,000
Medicaid Net Savings (state share) (proportion of net savings)	\$707,000	\$3,990,000	\$4,450,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$11,400,000	\$64,700,000	\$72,100,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Nevada

Total Annual Intervention Costs (at \$10 per person): \$23,320,000

### Nevada Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$41,200,000	\$139,000,000	\$152,600,000
<b>State Net Savings (Net savings = Total savings minus intervention costs)</b>	\$17,900,000	\$115,700,000	\$129,300,000
<b>ROI for State</b>	0.77:1	4.96:1	5.55:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$4,850,000	\$31,200,000	\$34,900,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$954,000	\$6,150,000	\$6,870,000
Medicaid Net Savings (state share) (proportion of net savings)	\$787,000	\$5,070,000	\$5,670,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$11,300,000	\$73,200,000	\$81,800,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## New Hampshire

Total Annual Intervention Costs (at \$10 per person): \$12,980,000

### New Hampshire Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$26,500,000	\$89,500,000	\$98,200,000
<b>State Net Savings (Net savings = Total savings minus intervention costs)</b>	\$13,600,000	\$76,500,000	\$85,300,000
<b>ROI for State</b>	1.05:1	5.90:1	6.57:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$3,670,000	\$20,600,000	\$23,000,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$659,000	\$3,710,000	\$4,130,000
Medicaid Net Savings (state share) (proportion of net savings)	\$659,000	\$3,710,000	\$4,130,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$8,600,000	\$48,400,000	\$53,900,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.



## New Jersey

Total Annual Intervention Costs (at \$10 per person): \$86,760,000

### New Jersey Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$187,100,000	\$630,400,000	\$692,100,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$100,400,000	\$543,600,000	\$605,400,000
<b>ROI for State</b>	1.16:1	6.27:1	6.98:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$27,100,000	\$146,700,000	\$163,400,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$4,870,000	\$26,300,000	\$29,300,000
Medicaid Net Savings (state share) (proportion of net savings)	\$4,870,000	\$26,300,000	\$29,300,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$63,500,000	\$344,100,000	\$383,200,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## New Mexico

Total Annual Intervention Costs (at \$10 per person): \$19,010,000

### New Mexico Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$32,000,000	\$107,900,000	\$118,500,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$13,000,000	\$88,900,000	\$99,500,000
<b>ROI for State</b>	0.69:1	4.68:1	5.24:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$3,520,000	\$24,000,000	\$26,800,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$901,000	\$6,140,000	\$6,870,000
Medicaid Net Savings (state share) (proportion of net savings)	\$366,000	\$2,490,000	\$2,790,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$8,260,000	\$56,300,000	\$63,000,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## New York

Total Annual Intervention Costs (at \$10 per person): \$192,920,000

### New York Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$460,400,000	\$1,550,600,000	\$1,702,500,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$267,500,000	\$1,357,700,000	\$1,509,600,000
<b>ROI for State</b>	1.37:1	7.04:1	7.83:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$72,200,000	\$366,500,000	\$407,600,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$12,900,000	\$65,800,000	\$73,200,000
Medicaid Net Savings (state share) (proportion of net savings)	\$12,900,000	\$65,800,000	\$73,200,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$169,300,000	\$859,400,000	\$955,600,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## North Carolina

Total Annual Intervention Costs (at \$10 per person): \$85,310,000

### North Carolina Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$166,000,000	\$559,000,000	\$613,800,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$80,600,000	\$473,700,000	\$528,500,000
<b>ROI for State</b>	0.95:1	5.55:1	6.20:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$21,700,000	\$127,900,000	\$142,600,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$4,970,000	\$29,100,000	\$32,500,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,850,000	\$16,700,000	\$18,700,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$51,000,000	\$299,800,000	\$334,500,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.



## North Dakota

Total Annual Intervention Costs (at \$10 per person): \$6,360,000

### North Dakota Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$13,500,000	\$45,700,000	\$50,200,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$7,230,000	\$39,400,000	\$43,900,000
<b>ROI for State</b>	1.14:1	6.20:1	6.90:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$1,950,000	\$10,600,000	\$11,800,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$462,000	\$2,520,000	\$2,800,000
Medicaid Net Savings (state share) (proportion of net savings)	\$240,000	\$1,300,000	\$1,450,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$4,570,000	\$24,900,000	\$27,700,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Ohio

Total Annual Intervention Costs (at \$10 per person): \$14,610,000

### Ohio Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$237,700,000	\$800,500,000	\$878,900,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$123,000,000	\$685,900,000	\$764,300,000
<b>ROI for State</b>	1.07:1	5.99:1	6.67:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$33,200,000	\$185,200,000	\$206,300,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$7,150,000	\$39,800,000	\$44,400,000
Medicaid Net Savings (state share) (proportion of net savings)	\$4,780,000	\$26,600,000	\$29,700,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$77,900,000	\$434,200,000	\$483,800,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Oklahoma

Total Annual Intervention Costs (at \$10 per person): \$35,230,000

### Oklahoma Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$65,000,000	\$219,000,000	\$240,400,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$29,800,000	\$183,800,000	\$205,200,000
<b>ROI for State</b>	0.85:1	5.22:1	5.83:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$8,040,000	\$49,600,000	\$55,400,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$1,960,000	\$12,100,000	\$13,500,000
Medicaid Net Savings (state share) (proportion of net savings)	\$928,000	\$5,720,000	\$6,390,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$18,800,000	\$116,300,000	\$129,900,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Oregon

Total Annual Intervention Costs (at \$10 per person): \$35,890,000

### Oregon Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$68,100,000	\$229,400,000	\$251,900,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$32,200,000	\$193,500,000	\$216,000,000
<b>ROI for State</b>	0.90:1	5.39:1	6.02:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$8,700,000	\$52,200,000	\$58,300,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$1,920,000	\$11,500,000	\$12,900,000
Medicaid Net Savings (state share) (proportion of net savings)	\$1,200,000	\$7,200,000	\$8,040,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$20,400,000	\$122,500,000	\$136,700,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Pennsylvania

Total Annual Intervention Costs (at \$10 per person): \$123,770,000

### Pennsylvania Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$271,700,000	\$915,000,000	\$1,004,700,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$147,900,000	\$791,300,000	\$880,900,000
<b>ROI for State</b>	1.20:1	6.39:1	7.12:1

\* In 2004 dollars

### Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$39,900,000	\$213,600,000	\$237,800,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$7,900,000	\$42,200,000	\$47,000,000
Medicaid Net Savings (state share) (proportion of net savings)	\$6,450,000	\$34,500,000	\$38,400,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$93,600,000	\$500,900,000	\$557,600,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Rhode Island

Total Annual Intervention Costs (at \$10 per person): \$10,790,000

### Rhode Island Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$25,000,000	\$84,200,000	\$92,500,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$14,200,000	\$73,400,000	\$81,700,000
<b>ROI for State</b>	1.32:1	6.81:1	7.57:1

\* In 2004 dollars

### Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$3,840,000	\$19,800,000	\$22,000,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$752,000	\$3,880,000	\$4,320,000
Medicaid Net Savings (state share) (proportion of net savings)	\$629,000	\$3,240,000	\$3,610,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$9,000,000	\$46,500,000	\$51,700,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.



### South Carolina

Total Annual Intervention Costs (at \$10 per person): \$41,950,000

#### South Carolina Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$81,700,000	\$275,200,000	\$302,200,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$39,700,000	\$233,300,000	\$260,200,000
<b>ROI for State</b>	0.95:1	5.56:1	6.21:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$10,700,000	\$62,900,000	\$70,200,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$2,670,000	\$15,600,000	\$17,400,000
Medicaid Net Savings (state share) (proportion of net savings)	\$1,180,000	\$6,940,000	\$7,750,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$25,100,000	\$147,600,000	\$164,700,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

### South Dakota

Total Annual Intervention Costs (at \$10 per person): \$7,700,000

#### South Dakota Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$14,700,000	\$49,700,000	\$54,600,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$7,080,000	\$42,000,000	\$46,900,000
<b>ROI for State</b>	0.92:1	5.47:1	6.10:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$1,910,000	\$11,300,000	\$12,600,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$447,000	\$2,650,000	\$2,960,000
Medicaid Net Savings (state share) (proportion of net savings)	\$239,000	\$1,420,000	\$1,590,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$4,480,000	\$26,600,000	\$29,700,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Tennessee

Total Annual Intervention Costs (at \$10 per person): \$58,860,000

### Tennessee Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$121,900,000	\$410,600,000	\$450,900,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$63,000,000	\$351,800,000	\$392,000,000
<b>ROI for State</b>	1.07:1	5.98:1	6.67:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$17,000,000	\$94,900,000	\$105,800,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$3,910,000	\$21,800,000	\$24,300,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,200,000	\$12,200,000	\$13,600,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$39,900,000	\$222,700,000	\$248,100,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Texas

Total Annual Intervention Costs (at \$10 per person): \$225,180,000

### Texas Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$378,800,000	\$1,275,700,000	\$1,400,700,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$153,600,000	\$1,050,500,000	\$1,175,500,000
<b>ROI for State</b>	0.68:1	4.67:1	5.22:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$41,400,000	\$283,600,000	\$317,300,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$9,040,000	\$61,800,000	\$69,200,000
Medicaid Net Savings (state share) (proportion of net savings)	\$5,850,000	\$40,000,000	\$44,800,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$97,200,000	\$665,000,000	\$744,100,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

Utah			
Total Annual Intervention Costs (at \$10 per person): \$24,220,000			
Utah Return on Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
Total State Savings	\$33,700,000	\$113,600,000	\$124,700,000
State Net Savings (Net savings = Total savings minus intervention costs)	\$9,520,000	\$89,400,000	\$100,500,000
ROI for State	0.39:1	3.69:1	4.15:1
* In 2004 dollars			
Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$2,570,000	\$24,100,000	\$27,100,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$654,000	\$6,140,000	\$6,900,000
Medicaid Net Savings (state share) (proportion of net savings)	\$269,000	\$2,530,000	\$2,840,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$6,030,000	\$56,600,000	\$63,600,000
* In 2004 dollars			
* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.			

Vermont			
Total Annual Intervention Costs (at \$10 per person): \$6,210,000			
Vermont Return on Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
Total State Savings	\$14,600,000	\$49,300,000	\$54,200,000
State Net Savings (Net savings = Total savings minus intervention costs)	\$8,450,000	\$43,100,000	\$48,000,000
ROI for State	1.36:1	6.95:1	7.73:1
* In 2004 dollars			
Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$2,280,000	\$11,600,000	\$12,900,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$479,000	\$2,450,000	\$2,720,000
Medicaid Net Savings (state share) (proportion of net savings)	\$340,000	\$1,730,000	\$1,930,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$5,350,000	\$27,300,000	\$30,300,000
* In 2004 dollars			
* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.			



## Virginia

Total Annual Intervention Costs (at \$10 per person): \$74,720,000

### Virginia Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$136,500,000	\$459,900,000	\$504,900,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$61,800,000	\$385,100,000	\$430,200,000
<b>ROI for State</b>	0.83:1	5.16:1	5.76:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$16,600,000	\$104,000,000	\$116,100,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$2,990,000	\$18,600,000	\$20,800,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,990,000	\$18,600,000	\$20,800,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$39,100,000	\$243,800,000	\$272,300,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Washington

Total Annual Intervention Costs (at \$10 per person): \$62,060,000

### Washington Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$120,400,000	\$405,800,000	\$445,500,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$58,400,000	\$343,700,000	\$383,500,000
<b>ROI for State</b>	0.94:1	5.54:1	6.18:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$15,700,000	\$92,800,000	\$103,500,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$2,830,000	\$16,600,000	\$18,500,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,830,000	\$16,600,000	\$18,500,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$36,900,000	\$217,500,000	\$242,700,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## West Virginia

Total Annual Intervention Costs (at \$10 per person): \$18,110,000

### West Virginia Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$42,300,000	\$142,600,000	\$156,600,000
<b>State Net Savings (Net savings = Total savings minus intervention costs)</b>	\$24,200,000	\$124,500,000	\$138,500,000
<b>ROI for State</b>	1.34:1	6.88:1	7.65:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$6,540,000	\$33,600,000	\$37,400,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$1,710,000	\$8,820,000	\$9,810,000
Medicaid Net Savings (state share) (proportion of net savings)	\$635,000	\$3,260,000	\$3,620,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$15,300,000	\$78,800,000	\$87,600,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Wisconsin

Total Annual Intervention Costs (at \$10 per person): \$54,990,000

### Wisconsin Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$116,600,000	\$392,900,000	\$431,400,000
<b>State Net Savings (Net savings = Total savings minus intervention costs)</b>	\$61,600,000	\$337,900,000	\$376,400,000
<b>ROI for State</b>	1.12:1	6.15:1	6.85:1

\* In 2004 dollars

Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$16,600,000	\$91,200,000	\$101,600,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$3,450,000	\$18,900,000	\$21,000,000
Medicaid Net Savings (state share) (proportion of net savings)	\$2,530,000	\$13,900,000	\$15,400,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$39,000,000	\$213,900,000	\$238,300,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

## Wyoming

Total Annual Intervention Costs (at \$10 per person): \$5,060,000

### Wyoming Return on Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
<b>Total State Savings</b>	\$10,100,000	\$34,200,000	\$37,600,000
<b>State Net Savings</b> (Net savings = Total savings minus intervention costs)	\$5,110,000	\$29,200,000	\$32,500,000
<b>ROI for State</b>	1.01:1	5.77:1	6.44:1

\* In 2004 dollars

### Indicative Estimates of State-level Savings by Payer: Proportion of Net Savings for an Investment of \$10 Per Person

	1-2 Years	5 Years	10-20 Years
Medicare Net Savings (proportion of net savings)	\$1,380,000	\$7,880,000	\$8,700,000
Medicaid Net Savings (federal share) (proportion of net savings)	\$268,000	\$1,530,000	\$1,710,000
Medicaid Net Savings (state share) (proportion of net savings)	\$227,000	\$1,290,000	\$1,440,000
Private Payer and Out of Pocket Net Savings (proportion of net savings)	\$3,230,000	\$18,400,000	\$20,600,000

\* In 2004 dollars

\* Source: TFAH calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.





# Methodology

## 4 SECTION

The study consists of a:

**A) Literature Review of Community-Based Prevention Studies; and**

**B) Return on Investment Model**

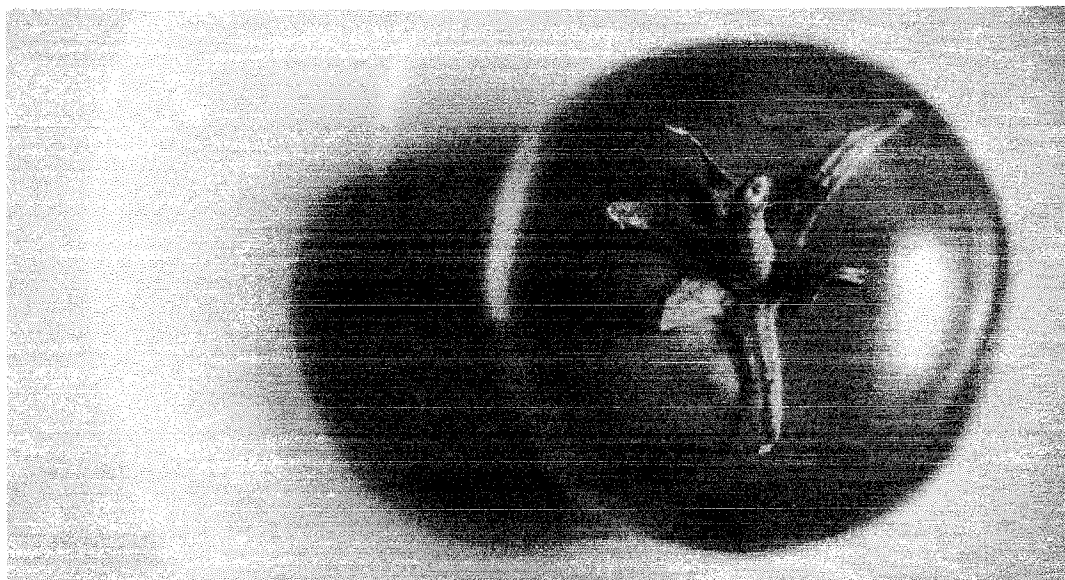
### A. LITERATURE REVIEW

In order to identify effective community-based disease prevention programs and the results and costs of these programs, TFAH consulted with NYAM to conduct a comprehensive literature review. Overall, the literature review identified 84 studies that met their criteria as effective “public health interventions.” (See Background box on page 40 for more detail.) These interventions included both community-based programs and policy changes. The studies focused on how programs or policy changes resulted in improved health or positive behavior changes within either an entire community or a particular at-risk targeted community. They did not include medical interventions, such as pharmaceutical, doctor-based, or clinical-based studies.

Overall, however, the researchers found the literature evaluating community-based disease prevention programs to be limited, and outcomes were not reported in a standardized

way. In the review, no studies directly included information about all of the areas modeled for this project, which include: the expenses of diseases, a community-based disease prevention program, data on the impact of interventions on diseases over time, and the per capita cost of implementing the program. Experts at the Urban Institute developed a composite based on the available data reported in the literature to derive assumptions for costs and health impacts.

Accordingly, TFAH calls for increased evidence-based research into community-based disease prevention programs that explicitly include information about the impact of interventions on diseases over time and the costs for the programs. This type of research would help policymakers better determine how to effectively invest in public health programs and assist those in the field in determining the potential cost of identified programs.



## BACKGROUND ON LITERATURE REVIEW

The full bibliography of the literature review is available in Appendix A. The studies included in the literature review had to meet the following criteria:

1. Report on a community-based public health program that showed results on improving health or behavior change related to the 8 diseases most impacted by physical activity, nutrition, and tobacco use (type 2 diabetes, high blood pressure, heart disease, kidney disease, stroke, some forms of cancer, COPD, and arthritis);
2. Meet a threshold for scientific study design and likelihood the study could be replicated; and
3. Did not involve direct health care services, be provider driven, or be conducted in a health care setting.

The researchers narrowed down more than 300 peer-reviewed journal articles and study descriptions to the 84 that were included in the review.

- To find the studies, the researchers searched the MEDLINE database via PubMed of studies from 1975 to 2008, cross checked findings in The Guide to Community Preventive Services and other meta-analyses, and interviewed public health experts.<sup>54</sup>
- When specific needed data were not included in studies, the researchers contacted study authors directly when possible to ask them about disease rate changes, behavior changes, or cost data.
- Study designs had to be: A) randomized controlled studies; B) quasi-experimental studies without obvious selection bias; or C) (if no other studies were available) pre-post studies with no comparison group, or comparison groups with likely selection bias.<sup>55</sup> Studies that did not meet these criteria were eliminated.

A majority of the 84 studies looked at programs that addressed a number of related health factors, such as weight, nutrition, and physical activity. Researchers often call these studies “multifactorial.” Eleven of the studies examined mass media or social marketing campaigns. Six of the studies focused on intensive counseling to support lifestyle changes. One study focused on the impact of a cigarette tax in reducing smoking. Two studies examined employer-based health promotion efforts.

While this report focuses on health care costs of adults, it also includes studies about interventions targeted at children because these studies have shown that these interventions have an impact on improving the health of the parents and families of those children and also improves the health of the children as they enter adulthood.

There are many other disease prevention efforts that may be effective or show promise that may not be part of model because they did not meet all of the criteria for inclusion.



## Examples of Studies from the Literature Review

### SHAPE UP SOMERVILLE: EAT SMART. PLAY HARD.<sup>55</sup>

In 2002, the U.S. Centers for Disease Control and Prevention (CDC) funded an environmental change intervention to prevent obesity in high-risk, early elementary-aged children in Somerville, Massachusetts. The Shape Up Somerville team put together a program for the first to third graders that focused on increasing physical activity options and improving dietary choices. Prior to the intervention, Tufts researchers found that 46 percent of Somerville's first to third graders were obese or overweight based on the BMI for age percentile. After one year of Shape Up Somerville, on average the program reduced one pound of weight gain over 8 months for an 8-year-old child. Based on conversations with the Somerville project leaders, project researchers estimate that citywide the per capita cost was between \$3 and \$4.<sup>57</sup>

The intervention included:

- Improved School Food -- Fruit/vegetable of the month, taste tests for students, educational posters, food staff training, new vegetarian recipes, daily fresh fruit.
- Healthy Eating and Active Time Club (HEAT) In-School Curriculum -- New curriculum that focused on increasing healthy food consumption, decreasing unhealthy food consumption, increasing physical activity and decreasing sedentary time. The Club implemented Cool Moves -- creative ways to include physical activity into classroom hours.
- HEAT Club After-School Program -- Curriculum with lesson plans using crafts, cooking demonstrations, and physically active games for education. The program also had a field trip to an organic farm where students were able to participate in the harvesting process.
- Parent and Community Outreach -- Including a monthly newsletter to parents as well as to the community containing updates on the project, health tips and healthy food coupons.
- "Shape Up Approved" Restaurants -- In 2005, 21 restaurants were considered "Shape Up Approved."
  - ▲ In order to be "Shape Up Approved" the restaurant must meet the following criteria:
    - Offer low fat dairy products
    - Offer some dishes in a smaller portion size
    - Offer fruits and vegetables as side dishes
    - Have visible signs that highlight the healthier options
- School Nurse Education -- School nurses were formally trained to annually measure height and weight, as well as how to counsel families of overweight or obese children.
- Safe Routes to School -- Formed a community walking committee and received funding from the Robert Wood Johnson Foundation through the Active Living by Design Initiative. They then hired a Pedestrian/Bike Coordinator for the City and created Safe Routes to School maps and distributed them to all the parents of first to third graders. The Mayor authorized all crosswalks to be repainted and to have bike racks installed at all elementary schools.
- Policy Initiatives -- The Somerville School Department put together a comprehensive Wellness Policy in 2006.

## THE IMPACT OF PROPOSITION 99: CALIFORNIA'S ANTI-SMOKING LEGISLATION<sup>58</sup>

In 1988, the state of California voted to enact Proposition 99, the California Tobacco Tax and Health Promotion Act. Proposition 99 increased the tax on cigarettes and other tobacco products from \$0.10 to \$0.35. The revenue from the tax was allocated to a variety of health promotion projects including:

- 20 percent allocated to a health education account to create school-based programs discouraging children from smoking;
- 45 percent to hospitals and physicians to provide for patients who cannot afford to pay;
- 5 percent to research;
- 5 percent to parks and recreation; and
- 25 percent to an unallocated account to go to any of the other programs or for fire prevention measures.

Three years after implementation of Proposition 99 researchers found a 9 percent reduction rate in cigarette sales in California and a decrease in the prevalence of cigarette smoking among adults from 26.7 percent in 1988 to 22.2 percent in 1992. This means that the act reduced cigarette consumption by close to 705 million packs between January 1989 and December 1991. A 2001 analysis found that there are "approximately one million fewer smokers in California than would have been expected [and] per capita cigarette consumption has fallen by more than 50 [percent]."<sup>59</sup>

The results of Proposition 99 suggest that placing a tax on certain products and using the revenue from the tax for educational and health programs can have a substantial effect on public health.

## HEALTHY EATING, ACTIVE COMMUNITIES (HEAC)<sup>60</sup>

Healthy Eating, Active Communities (HEAC), a program funded by The California Endowment, brings together community residents and public institutions, and works with local government and with private businesses, in an effort to prevent childhood obesity by improving the environment children inhabit. The program, at a cost of \$7 annually per capita in the target communities with minimal additional expenses for technical assistance, has already accomplished significant changes in the food and physical activity environments and policies in these communities, including new parks, input into city general plans, healthier food marketing in local stores, healthier foods in hospital, public health department, and public park vending machines, and increased physical activity opportunities in schools and after school programs.

Within 6 California communities HEAC focuses on forming a partnership between a community-based organization, school districts and a public health department to implement strategies to improve nutrition and physical activity environments. In each community the partnership works in 5 sectors including:

- In Schools--by improving the quality of foods sold and available on campus, and advocating for increased compulsory

PE for grades K-12, as well as more opportunities for non-competitive physical activity.

- After School -- such as improving cooperation with parks and recreation departments.
- In Neighborhoods -- improving access to affordable fresh produce, providing safer walkways and parks, and limiting the promotion of unhealthy foods.
- In the Healthcare Sector -- HEAC, with the help of Kaiser Permanente, training health care providers to incorporate more prevention and health promotion into clinical practice, and engaging physician champions to advocate for improving access to healthy foods and physical activity.
- In Marketing and Advertising -- such as eliminating the marketing of unhealthy products to children in and around schools, and via television, internet and other media.

HEAC aims to effect policy change that will improve environments for healthy eating and active living. Also, in January 2007, HEAC participated in the first California Convergence meeting, which aims to promote statewide improvements in food and physical activity environments, and is a core partner within the emerging ongoing work of Convergence.

## GO BOULDER<sup>61</sup>

Greater Options in Transportation, better known as GO Boulder, is a program in Boulder, Colorado, aimed at providing residents with more transportation options than cars. Through the multi-sectoral program that works with residents, intergovernmental agencies and businesses in the community Boulder has been able to develop a sustainable transportation system. GO Boulder uses incentives, such as Walk

and Bike Week and commuter awards, to encourage people to walk, bike, or take the bus.

From 1990 to 1994, Boulder showed a 3.5 percent increase in the number of pedestrian trips and a 2.2 percent rise in bike trips. Also, unlike the nearby city of Denver where population as well as single occupancy vehicle use increased, the population in Boulder continued to grow without a rise in single occupancy vehicle use.



## YMCA'S PIONEERING HEALTHIER COMMUNITIES<sup>62</sup>

The YMCA has a Pioneering Healthier Communities Program in more than 64 communities across the country that focus on: 1) raising the visibility of lifestyle health issues in the

national policy debate, and 2) encouraging and supporting local communities to develop more effective strategies to promote healthy lifestyles.

### **Sample Results from YMCA Pioneering Healthier Communities Sites Programs Impacting Children's Health and Well-Being<sup>63</sup>**

#### ***Attleboro, Massachusetts -- Physical Activity Club (A 10-week physical activity and healthy eating program for children and their caregivers)***

*100 kids in a pilot with statewide expansion with state funding*

- 17 percent increase in daily physical activity
- Decrease in BMI from 30.3 to 28.5
- Increase in fruit consumption by 6 percent; reduction in fast food and vending machine use.

#### ***Dallas -- CATCH (Coordinated Approach to Child Health -- an evidenced-based healthy eating and physical activity curriculum)***

*3,100 kids in 100 after school child care sites*

- Increased fruit consumption
- Decreased dessert/candy consumption
- Increase in physical activity from 4 to 7 times a week
- Decreased TV time

#### ***Des Moines -- Trim Kids (A proven, multidisciplinary 12-week plan that gives parents and children a healthy approach to lifetime weight management)***

*750 individuals (kids, siblings and parents / for overweight/obese kids). Expanded across Iowa, trained 12 other sites*

- Average weight loss is 5 lbs for elementary, 10 lbs for secondary

#### ***Pittsburgh -- ASAP (Afterschool with Activate Pittsburgh -- evidence-based curriculum and program to develop lifelong healthy habits)***

*6,500 low-income diverse kids*

- 76 percent of kids increased muscular strength
- 56 percent increased muscular endurance
- 69 percent increased flexibility

#### ***Grand Rapids, Michigan -- Healthy U (A proven health and wellness program for children)***

*3,400 low-income, diverse kids in dozens of sites*

- Dramatic decrease in blood pressure and increase in strength and flexibility
- More than 90 percent improved school attendance, completed homework, chose not to smoke, drink or use drugs

### **Case Study: Activate West Michigan and Healthy U<sup>64</sup>**

In 2003, the YMCA of Greater Grand Rapids, Michigan created the Activate West Michigan coalition in partnership with local government, community organizations, schools, and healthcare, corporate, and non-profit leaders. They initiated a "Healthy U" health and wellness program, which included physical fitness and nutrition education for elementary and middle-school students after school hours both at schools and community centers. In addition, students exercised at the YMCA gym at least once a week. After a year, the children made improvements on strength and flexibility tests.

In addition, the community helped support the program. For example, school children started gardens at various sites in the community. Two inner city farmers' market programs provided access to healthy foods, samples of vegetables, and education about cooking vegetables. According to a survey, 90 percent of people who attended the markets wanted additional markets and had learned from this experience.

### **Case Study: Attleboro, Massachusetts and Rapid City, South Dakota<sup>65</sup>**

Attleboro, Massachusetts and Rapid City, South Dakota looked at ways to promote increased physical activity through Pioneering Healthier Communities projects. The YMCA's partnered with local leaders, schools, hospitals, public health officials, health care providers, business leaders, and the media.

In Attleboro, the coalition focused on a walking school bus program, a pedometer steps challenge among fourth and fifth graders, a healthy kids day, and building a bike trail and non-motorized connections to commuter rail stations. It also sponsored healthy eating through improving the nutrition of foods in schools and recruiting a local supermarket to provide a "Healthy Snack of the Week" to school and hospital cafeterias. Zoning laws were also changed to allow for more sidewalks and streetscapes.

In Rapid City, civic leaders required that new building include sidewalks and smarter development practices, such as building bike lanes, wider sidewalks, and adding trees, benches, and walk signals in downtown areas.

## TOGETHER, LET'S PREVENT CHILDHOOD OBESITY-COMMUNITY BASED PREVENTION IN FRANCE (EPODE)<sup>66</sup>

In 2005, the French government launched the EPODE campaign with the goal of lowering childhood obesity rates in 5-12 year olds through a 5-year plan of intervention in 10 towns situated across the country.

The plan takes a multi-sectoral approach by involving parents and families, general practitioners, school nurses, teachers, towns, businesses, and the medical community. The 3 fundamental steps are:

- **Informing All Sectors of the Community about the Problem** -- All those involved are informed through public meetings, brochures, posters, and media coverage.
- **Training Participants** -- General practitioners and school nurses are trained on how to diagnose and treat obese children.
- **Taking Action in Schools and Towns** -- Schools integrate nutritional education and physical education into the school day. Also, school menu planning is targeted and children are taught how cook with fresh fruits and vegetables and be given access to food tasting workshops.

In order to track progress, the BMI of each child is calculated, recorded, and sent to his or her parents. Parents of those who are overweight or obese will be encouraged to consult their family physician.

Anecdotal evidence suggests that obesity has (at least) remained constant in the intervention towns while it doubled in control areas. Mothers of children participating in the intervention have reported weight loss as well. The complete results will be available in 2009 upon completion of the 5-year plan.

## NORWAY COMMUNITY INTERVENTION<sup>67</sup>

In Oslo, Norway a group of researchers sought to test the effects of a community-based intervention to increase physical activity among low-income individuals, according to a 2006 study. A comprehensive intervention program was implemented, at a reported cost of 0.59 Euros per capita (approximately \$0.93 US dollars), in an effort to change the behaviors of individuals. The intervention efforts included:

- **Information Distribution** -- Leaflets were designed and distributed that included health reminders such as the benefit of using stairs instead of elevators, and stands with health information were set up as well as mass media activities.
- **Individual Counseling** -- Health counseling was provided during the biannual fitness test.
- **Walking Groups** -- Various walking groups were organized, as well as indoor activity sessions at no cost during the intervention.
- **Environmental Change** -- In order to increase accessibility to areas for physical activity, walking trails were labeled within the district, lighting on streets improved and trails were maintained during the winter to keep them safe.

The follow up after 3 years showed that compared to the control community, the intervention group reported an 8-9 percent increase in physical activity, 14 percent fewer individuals gained weight, 3 percent more quit smoking, and there were significant decreases in blood pressure.

## B. RETURN ON INVESTMENT MODEL

The Urban Institute researchers developed a model to estimate how investing in community-based disease prevention could lead to lower health care costs. This model is based on the literature review led by NYAM and data on disease rates and associated medical expenditures. The model addressed 3 questions:

1. How much do people with selected preventable diseases spend on medical care?
2. If the rates of these conditions were reduced, how much of these expenditures could be saved?
3. How would these savings be distributed across payers?

Based on the review of the literature, the researchers considered 1) the costs of the most expensive diseases related to physical inactivity, poor nutrition, and smoking; 2) program cost assumptions; 3) disease rate reduction assumptions; 4) cost savings estimates; and, 5) limitations and notes about the model.

The model is used to compare costs of a given intervention with its expected effects on medical care expenditures to assess the potential return on investment in community-based disease prevention programs. As an example of potential return, the model looks at an investment of \$10 per person per year for successful community-based disease prevention programs related to improving physical inactivity and nutrition, and preventing smoking and other tobacco use. Based on findings reported in the literature, the researchers assumed that such strategic interventions could reduce uncomplicated diabetes and high blood pressure rates by 5 percent in one to 2 years; heart, stroke, and kidney disease by 5 percent within 5 years, and cancer, arthritis, and COPD by 2.5 percent within 10 to 20 years.

### 1. Current Costs of Most Expensive Diseases:

The researchers at NYAM and the Urban Institute determined the most expensive set of diseases that have shown potential to be reduced through physical activity, nutrition, and smoking interventions. These include: heart disease, selected types of cancers, selected lung diseases, diabetes, hypertension,

heart disease, stroke, arthritis, and kidney disease. None of these diseases can be prevented entirely; some individuals develop these conditions due to genetics or other factors unrelated to activity, nutrition, or smoking.

The report relies on a 2004 *Health Affairs* study by Thorpe, et. al. to determine the most expensive diseases, and then a review by NYAM of the literature to determine which of the most expensive diseases respond to physical activity, nutrition, and smoking interventions.<sup>68</sup>

The Urban Institute used data from the Medical Expenditure Panel Survey (MEPS) from 2003 to 2005 (adults only, excluding people in nursing homes or other institutions) to estimate the health care costs of the diseases nationally.

Based on the literature review and consultation with a medical advisor, the diseases were grouped into categories, using 3 broad groups of conditions: 1) uncomplicated diabetes and/or high blood pressure 2) diabetes and/or high blood pressure with complications (heart disease, stroke, and/or kidney disease); and 3) selected cancers (those amenable to community-based prevention), arthritis, and chronic obstructive pulmonary disease (COPD).

### DISEASE GROUPINGS USED IN THE MODEL

- Uncomplicated Diabetes and/or High Blood Pressure
  - ▲ Diabetes alone
  - ▲ High blood pressure alone
  - ▲ Diabetes and high blood pressure
- Complicated Diabetes and/or High Blood Pressure
  - ▲ Diabetes with heart disease, kidney disease, and/or stroke
  - ▲ High blood pressure with heart disease, kidney disease and/or stroke
- Non-diabetic, Non-hypertensive Heart Disease, Kidney Disease, and/or Stroke
- Cancer
- Arthritis
- COPD



## FINANCIAL BURDEN OF SPECIFIC DISEASES

The Urban Institute researchers conducted regression analyses to estimate the percent of health care costs attributable to each disease group. Diabetes, high blood pressure, heart disease, stroke, kidney disease, cancer, arthritis, and COPD account for almost 38 percent of America's health care costs. Significant numbers of cases of these diseases could be prevented or delayed with increases in physical activity, good nutrition, and smoking cessation.

### Percent of U.S. Health Care Costs By Top Diseases That Can Be Impacted By Physical Activity, Nutrition, and Smoking

(Based on current disease rates, including all insurance payers, does not include people in institutionalized care)

Health Conditions	Percent of Health Care Costs in the U.S.
Diabetes, high blood pressure, or a combination of the 2 diseases	9.4 percent
Diabetes or high blood pressure who also have heart disease or stroke and/or kidney disease	16.0 percent
Heart disease or stroke and/or kidney disease who do not have diabetes or high blood pressure	6.2 percent
Cancer	3.1 percent
Arthritis	1.1 percent
COPD	2.0 percent

Source: Urban Institute calculations using data from the 2003-2005 Medical Expenditure Panel Survey (MEPS)

## 2. Building Estimates for Costs of Programs:

Of the studies that outlined potential costs or where project staff contacted researchers to determine costs, most had costs estimated to be in the range of \$3-\$8 per person.

- A few programs were found where costs exceeded \$10. Those identified were primarily interventions that focused on intensive coaching and one-on-one or

small group counseling where administrative costs were higher and evaluations and measurements were intensive.

In order to determine an estimate, in addition to reviewing the available literature, TFAH and Prevention Institute consulted a set of experts who agreed that \$10 is a high and therefore, a conservative assumption for the costs of community-based programs.



## Sample Interventions

Study	Target Condition(s)	Intervention Information	Intervention Effect	Population and Age
Carleton (1995)	Cardiovascular Disease (CVD), Coronary Heart Disease (CHD), Stroke	Mass media campaign, community programs aimed at 71,000 people. Intervention population randomly generated, compared to a reference community. Cost: \$15 per person per year.	At 5 years: Risk for both CVD and CHD down 16 percent	2,925 men and women 18-64 [control (1,665); intervention (1,260)]
Farquhar (1990)	CVD, CHD, Stroke	Mass media campaign, community programs aimed at 122,800 people. Intervention population randomly generated, compared to a reference community. The organizational and educational program was delivered at a per capita cost of about \$4 per year.	At 5 years: CHD risk down 16 percent; CVD mortality risk down 15 percent; Prevalence of smoking down 13 percent; Blood pressure down 4 percent; Pulse down 3 percent; Cholesterol down 2 percent.	971 men and women 25-74 [control (480); intervention (491)]
Fichtenberg (2000)	CVD, CHD, Stroke	Cigarette tax: \$0.25 increase on the price of cigarettes with \$0.05 of the net tax for an antitobacco educational campaign.	At 3 Years: CHD mortality down 2.93 deaths/yr/100,000 population per year; Amount smoked down 2.72 packs/person/yr.	California population
	CVD	Mass media campaign, community programs aimed at 56,000 people. Intervention population randomly generated, compared to a reference community. Cost: \$10 per year per adult over the age of 16.	At 4 years: amount of tobacco grams/day decreased 8 percent; 11 percent fewer people smoked.	2,206 men and women 16-69 [control (1,358); intervention (848)]
Gutzwiler (1985)	CVD, CHD, Stroke	Mass media campaign, community programs aimed at 56,000 people. Intervention population randomly generated, compared to a reference community. Cost: \$10 per year per adult over the age of 16.	At 4 years: Hypertension down 7 percent.	481 men and women 16-69 with hypertension (>160/95 mm Hg) [control (117); intervention (364)]
Haines, et al. (2007)	CVD, CHD, Stroke	12-week employee walking program on a college campus. No cost information available, but such programs are extremely low cost and often have positive ROIs.	At 3 months: 1 percent decrease in BMI; 3.4 percent decrease in hypertension; 3 percent decrease in cholesterol; 5.5 percent decrease in glucose	60 women in their forties

Sample Interventions				
Study	Target Condition(s)	Intervention Information	Intervention Effect	Population and Age
Herman (2008)	CVD, Nutrition	Improving access to fruits and vegetables among women who enrolled for postpartum services at 3 Women, Infants, and Children program (WIC) sites in Los Angeles. Participants were assigned either to an intervention (farmers' market or supermarket, both with redeemable food vouchers) or control condition (a minimal nonfood incentive). Interventions were carried out for 6 months, and participants' diets were followed for an additional 6 months. No cost information, but minimal administrative costs to assign and track participation.	At 6 months: + 1.4 servings per 4,186 kJ (1,000 kcal) of fruits and vegetables	451 low income minority women 18 years and older [control (143); intervention (308)]
Osler and Jespersen (1993)	CVD	Mass media campaign, community programs aimed at 8,000 people. Intervention population randomly generated and compared to a reference community. Cost: \$6 per capita.	At year one: 39 percent eating less fat; 10 percent decrease in smoking; 28 percent increase in physical activity.	1,196 men and women 20-65 [control (629); intervention (567)]
Prior (2005)	CVD	Worksite health promotion, 15 minute cardiovascular risk factor screening, individualized counseling to high-risk employees. Cost: \$20 per employee (note this is a high risk population).	At 3.7 years: 12.6 percent decrease in amount smoked; 3.3 percent decrease in diastolic BP; 7.8 percent decrease in cholesterol.	808 high-risk smokers 16-76 years old
Rossouw (1993)	CVD	Mass media campaign, community programs aimed at 122,800 people. Intervention population randomly generated, compared to a reference community (separate high risk group also). Cost: \$5-\$22 per capita.	At 4 years: Men decreased tobacco intake per day by 0.7 percent, women by 0.3 percent; Men decreased smoking prevalence by 1.1 percent, women by 2.5 percent; Men decreased diastolic BP by 2.5 percent, women by 3 percent; Men decreased systolic BP by 2.5 percent, women by 3.0 percent. High risk at 4 years: Men decreased tobacco intake per day by one percent, women by 0.8 percent; Men decreased smoking prevalence by 2 percent, women by 8.2 percent; Men decreased diastolic BP by 3 percent, women by 2.8 percent; Men decreased systolic BP by 1.3 percent, women by 1.7 percent.	4,087 men and women 15-64 [control (1305); intervention (2,782; high risk; 1,198 (43 percent)]



### Sample Interventions

Study	Target Condition(s)	Intervention Information	Intervention Effect	Population and Age
Economos, et. al. (2007)	Nutrition, Physical activity	"Shape Up Somerville" -- comprehensive effort to prevent obesity in high-risk children in first to third grade in Somerville, MA. Improved nutrition in schools, health curriculum, after-school curriculum, parent and community outreach, worked with community restaurants, school nurse education, safe routes to school program. Cost: Between \$3-\$4 per person.	After one year, on average the program reduced one pound of weight gain over 8 months for an 8 year old child.	First to third grade children in Somerville
EPODE (2004)	Nutrition	Multisectorial 5-year plan involving parents and families, medical providers, school nurses, teachers, towns, businesses, and media campaigns. Estimated cost: Approximately 2 Euros (\$3.17 USD) per person.	Obesity has at least remained consistent in targeted towns while it doubled in control areas. Mothers have reported weight loss as well.	5-12 year olds in 10 towns in France
Jenum, et. al. (2006)	Physical activity	Provided information through leaflets and mass media, individual counseling, walking groups, and increased accessible areas for safe recreation. Estimated cost of 0.59 Euros (\$0.93 US dollars) per person	After 3 years, compared to the control group, the intervention group had an 8-9 percent increase in physical activity, 14 percent fewer individuals gained weight, 3 percent more quit smoking, and significant decreases in blood pressure rates were reported.	Low-income adults in Oslo, Norway
Hu et al (1994)	Smoking cessation	California Proposition 99 -- increased taxes on cigarettes and other tobacco products from 10 cents to 35 cents.	After 3 years, cigarette sales dropped 9 percent and smoking among adults decreased from 26.7 percent in 1988 to 22.2 percent in 1992.	Population of California

## SOME PREVENTION EFFORTS HAVE NO DIRECT COST WHILE HAVING BIG HEALTH BENEFITS

Not all community-based disease prevention programs have direct costs. In fact, some strategies, like tobacco taxes, can generate revenue.

- Studies have shown that increases in tobacco taxes result in significant drops in smoking rates, which lead to improved health and lower health care costs. Specifically, research indicates that every 10 percent increase in the real price of cigarettes reduces overall cigarette consumption by approximately 3 to 5 percent, reduces the number of young-adult smokers by 3.5 percent, and reduces the number of kids and pregnant women who smoke by 6 or 7 percent.<sup>69</sup> For example, Texas recently increased its cigarette tax by \$1.00 per pack, and consumption over the following year dropped by more than 20 percent.<sup>70</sup>
- Smoke-free laws also have a positive impact on the health of communities with no real cost.<sup>71</sup> The cigarette companies acknowledged the power of smoking restrictions to reduce smoking rates years ago (in internal company documents revealed in anti-smoking lawsuits), stating, for example, that "if our consumers have fewer opportunities to enjoy our products, they will use them less frequently."<sup>72</sup>
- Local zoning laws can improve the walkability of a community, supporting increased physical activity. For example, in Davis, California, a carefully designed bike network, which includes a dedicated traffic lane for bikers, has led to 25 percent of all trips in the city being by bike (compared to one percent nationally), and a decision by the city to stop busing children to school, having them bike instead.<sup>73</sup>
- Experts believe menu labeling at fast food restaurants (showing caloric and nutrition information) contributes to reducing obesity. One study has suggested that menu labeling in Los Angeles could significantly slow the rate of weight increases in the population, thus saving health care costs associated with obesity.<sup>74</sup>

### 3. Building Disease Rate Reduction

**Assumptions:** Based on findings from the literature review and consultations with a physician, the Urban Institute researchers made assumptions about the length of time it could take for community-based disease prevention programs focusing on increasing physical activity, improving nutrition, and reducing smoking to have an impact on health.

Building on estimates from a range of studies, the researchers modeled an investment of only \$10 per person into effective programs to increase physical activity and good nutrition and prevent smoking, and a reduction in rates of uncomplicated diabetes and high blood pressure of 5 percent in one to 2 years; complicated diabetes and high blood pressure as well as non-diabetic, non-hypertensive heart disease, stroke and/or kidney disease of 5 percent within 5 years; and cancer, arthritis, and COPD of 2.5 percent within 10 to 20 years.

In order to determine the effect on diseases, the researchers translated the results of programs as presented in articles into the effect these changes could have on diseases or limiting disease progression. The literature outlines the connections between changes in behavior and the impact on health. For instance, increased physical activity, reduced Body Mass Index (BMI), or lowering systolic blood pressure have been shown to delay or prevent types of disease development. In addition, studies describe how different diseases progress. Results can be seen in reducing type 2 diabetes, for example, in just one to 2 years. This reduction would inevitably have an effect on the complications of diabetes, most notably heart disease, kidney disease, and stroke, although reductions or delays in these conditions would take longer to be realized than reductions in uncomplicated diabetes or high blood pressure (an estimated 5 years as opposed to one to 2 years). Cancers, arthritis, and COPD

would take the longest to be affected, taking 10 to 20 years before disease prevention programs could help bring about reductions in disease rates. The model assumes a one-time reduction in diabetes and/or high blood pressure, even though the sustained investment in prevention programs includ-

ed in the model could likely result in greater declines. The researchers acknowledge that all of these diseases may develop unrelated to physical inactivity, poor nutrition, or smoking. The model focuses on the estimated share of these disease rates that could be affected by these factors.

### Examples of Studies Showing Intervention Impact on Disease or Behavior Rates

Study	Target Behavior	Target Condition	Finding
Brownson (2000)	Physical Activity	Cardiovascular Disease	Of people who had access to walking trails, 38.3 percent used them. Of these users, 55.2 percent increased their amount of walking.
CDC (2005)	Physical Activity, Weight Loss	Diabetes	By losing 5 to 7 percent of body weight and getting just 2 1/2 hours of physical activity a week, people with pre-diabetes can cut their risk for developing type 2 diabetes by about 60 percent.
Dauchet (2005)	Nutrition	Cerebrovascular Disease	Risk of stroke was decreased by 11 percent for each additional portion per day of fruit and 3 percent for each additional portion per day of vegetables.
Felson (1997)	Weight Loss	Arthritis	40 percent increase in risk per 10-lb weight gain and 60 percent increase in risk per 5-unit BMI increase.
HHS (2003)	Nutrition	Cardiovascular Disease, Cholesterol	A 10 percent decrease in cholesterol levels may result in an estimated 30 percent reduction in the incidence of coronary heart disease.
Joshiyura, et. al. (2001)	Nutrition	Cardiovascular Disease	Each additional serving of fruits or vegetables per day was associated with a 4 percent lower risk for coronary heart disease.
McGinnis & Foege (1993)	Nutrition	Cardiovascular Disease	22 to 30 percent of CHD deaths are due to dietary factors, especially increased consumption of cholesterol and saturated fat and a decreased consumption of fiber.
	Nutrition	Cancer	The proportion of all cancer deaths attributable to diet is 35 percent.
	Nutrition	Diabetes	45 percent of diagnosed cases are due to poor diet, inactivity, and obesity.
Nanchahal (2005)	Weight Loss	CVD	Every kilogram of weight gain after high school increased risk of congenital heart disease by 3.1 percent in men.
Hamman (2006)	Weight Loss	Diabetes	16 percent reduction in diabetes risk per kilogram of weight lost.

### SMALL CHANGES CAN HAVE A BIG IMPACT ON HEALTH

The research shows that even small changes in behavior can have a major impact on health. For example:

- For individuals, a 5 to 10 percent reduction in total weight can lead to positive health benefits, such as reducing risk for type 2 diabetes.<sup>75</sup>
- An increase in physical activity, even without any accompanying weight loss, can mean significant health improvements for many individuals. A physically active lifestyle plays an important role in preventing many chronic diseases, including coronary heart disease, hypertension, and type 2 diabetes.<sup>76, 77, 78, 79</sup>



**4. Cost Savings Estimates:** Using the share of costs estimated in the regression analyses and the size of the effects of prevention programs reported in the literature, the Urban Institute researchers estimated the medical care expenditure savings that would result

from implementation of such an intervention. They then applied this formula to the example of a program that reduces the prevalence of uncomplicated diabetes and high blood pressure by 5 percent in the short run.

#### Medical Savings Calculations

The savings ( $S$ ) from reduction of condition  $j$ :

$$S_j = (e_j) * (\text{share of costs}_j) * \text{expenditures}$$

Where:

$S_j$  is savings from the intervention

$e_j$  is the effect of the intervention on disease cluster  $j$

Share of costs refers to estimated costs attributable to disease cluster  $j$

Expenditures is total medical expenses

#### Short Run Savings Example

(Preliminary Estimates)

The savings from 5% reduction in uncomplicated diabetes and hypertension in the U.S.:

$$\begin{aligned} S_{\text{diab\_HBP}} &= (e_{\text{diab\_HBP}}) * (\text{share of costs}_{\text{diab\_HBP}}) * \text{expenditures}_{\text{US}} \\ &= (0.05) * (0.094) * \$1,235 \text{ billion} \\ &= \$5.8 \text{ billion annually} \end{aligned}$$

Because the model is based on adults only and excludes nursing home expenditures, the expenditure number used in this example

excludes spending on nursing homes and is adjusted to account for spending on children.



## 5. Limitations and Notes on the Model

The researchers note that the estimates are likely to be conservative. As noted above, the model assumes costs in the higher range and benefits in the low range. Furthermore, the model does not take into account any costs of institutional care. Chronic disease often leads to disability or frailty that may necessitate nursing home care, so exclusion of these costs may underestimate the return on investment in reduction of disease.

While the model is still being elaborated to address many of these issues, some known limitations of the model as reported here include:

- The model assumes a sustained reduction in the prevalence of diabetes and hypertension over time. The literature on the duration of the effects of intervention is small, with effects usually reported over no more than 3 to 5 years.
- The model assumes a steady state population. This model is based on current disease prevalence and does not take into
- account trends in prevalence. For example, diabetes is increasing while heart disease is declining, but the model estimates savings based on the current prevalence.
- While the model does take into account competing morbidity risks, it does not take into account changes in mortality. However, in the short (one to 2 years) and medium run (5 years), changes in mortality are likely to be small.
- The model calculates all savings in 2004 dollars. Thus, it does not take into account any rise in medical care expenditures or changes in medical technology.
- The model incorporates only the marginal cost of the interventions and does not reflect the cost of the basic infrastructure required to implement such programs.
- The intervention effects do not account for variations in community demographics such as distribution of race/ethnicity, age, gender, geography, or income. The intervention effect is treated as constant across groups.







# Conclusions

## 5 SECTION

**T**he nation's economic future demands we find ways to reduce health care costs. Preventing people from getting sick is one of the most important ways we can drive costs down.

This study shows that the country could save substantial amounts on health care costs if we invest strategically in community-based disease prevention programs. We could see significant returns for as little as a \$10 investment per person into evidence-based programs that improve physical activity and nutrition and lower smoking rates in communities. Not only could we save money, many more Americans would have the opportunity to live healthier lives.

Physical activity, nutrition, and smoking are 3 of the most important areas to target for prevention, and as this study shows, community-based programs can generate a significant return both in terms of health and financial savings. There is a wide range of other disease prevention efforts that target these and other health problems and have a beneficial impact on the health of Americans.

Until the country starts making a sustained investment into disease prevention programs, we will not realize the potential savings. We need to make the investment to see the returns.

TEAH and RWJF launched the Healthier America Project in 2007 to find ways to improve the health of the nation. The project has set a number of goals, including:

- America should strive to be the healthiest country in the world;
- Every American should have the opportunity to be as healthy as he or she can be;
- Every community should be safe from threats to its health; and

- All individuals and families should have a high level of health, health care, and public health services, regardless of who they are or where they live.

For America to become a healthier nation, prevention must become a driving force in our health care strategy and become central to discussions about how to reform health care in the U.S. For too long, disease prevention has been considered too difficult to implement programs on a wide-scale basis.

One challenge has been to get policymakers to invest, given the already high health care costs and difficulties in showing the impact of many community-based prevention programs. Understanding the return on investment is an important step to help determine what types of programs to invest in, how much should be invested, and how the programs could be funded.

This study identified a range of community-based programs that have been shown to have a positive impact on improving the health of communities by increasing physical activity, improving nutrition, or preventing or helping people quit smoking. These programs are designed to help improve the health and well-being of large segments of the population without direct medical treatment. Instead, community disease rates are decreasing and health is improving through increased access to safe places to be active, affordable nutritious foods, and support to help prevent or quit smoking.

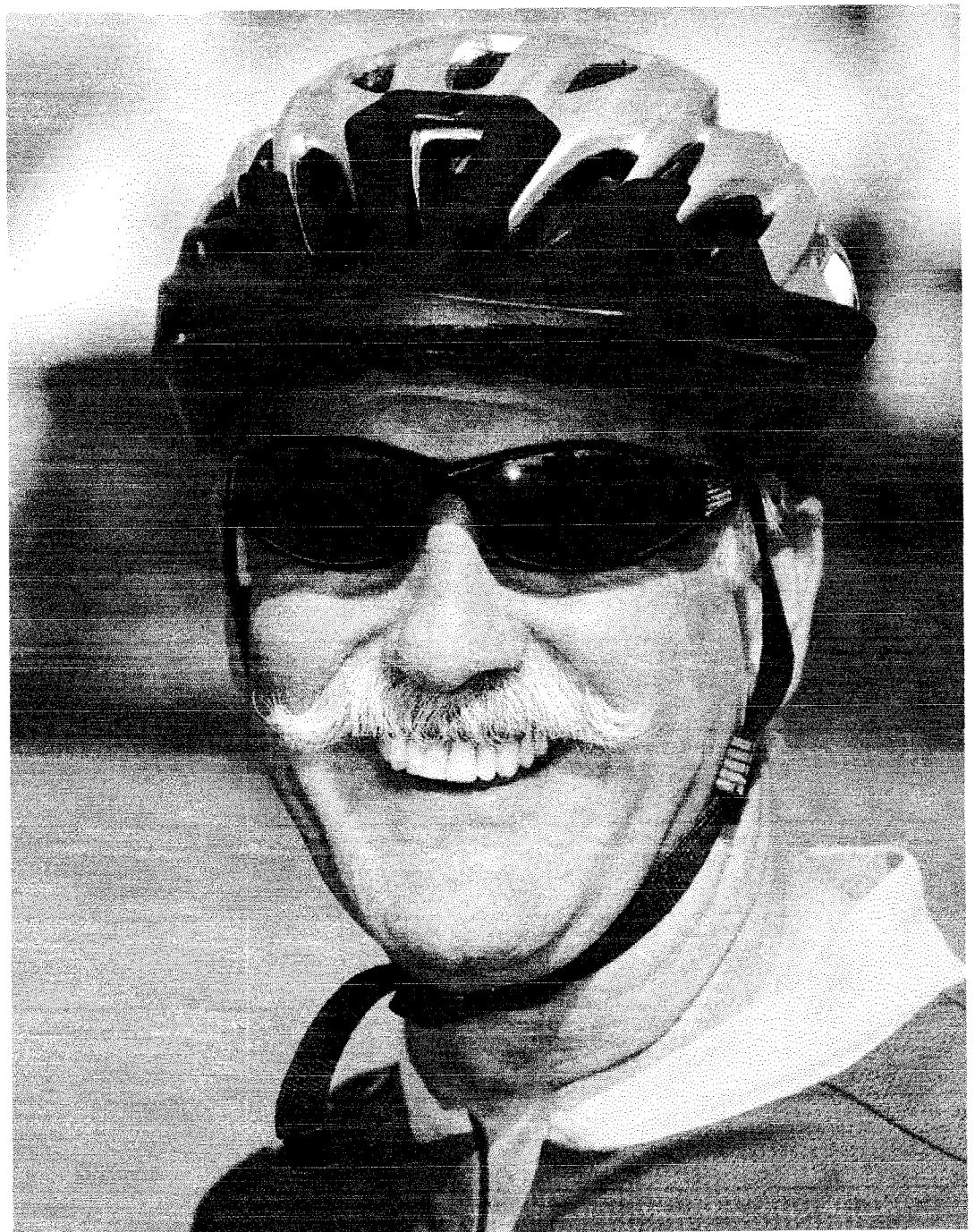


Insurance providers, including Medicare, Medicaid, and private payers, would directly benefit from investments made in community-based prevention. In addition, communities would benefit from improved health and productivity of the workforce and citizens in those communities.

In addition, the country must make improving research into community-based disease prevention programs a priority. Since these programs hold so much potential for improv-

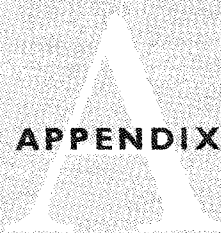
ing the health of Americans in addition to saving health care costs, it is important to gain an increased understanding about what programs are most effective and how to best target efforts in communities, including evaluating costs and outcomes. This research is important to help policymakers determine the most effective ways to invest for the highest returns in health and savings.

Investing in prevention is investing in the future health and wealth of the nation.





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# Total Savings, Costs, and Net Savings

## B APPENDIX

NATIONAL RETURN ON INVESTMENT OF \$10 PER PERSON (Net Savings)			
	1-2 Years	5 Years	10-20 Years
<b>Total Care Cost Savings</b>	\$5,784,081,647	\$19,479,731,068	\$21,387,802,964
<b>Costs of Interventions</b>	\$2,936,380,000	\$2,936,380,000	\$2,936,380,000
<b>U.S. Net Savings</b>	\$2,847,701,647	\$16,543,351,068	\$18,451,422,964
<b>ROI</b>	0.96:1	5.60:1	6.20:1

\* In 2004 dollars, net savings



# Endnotes

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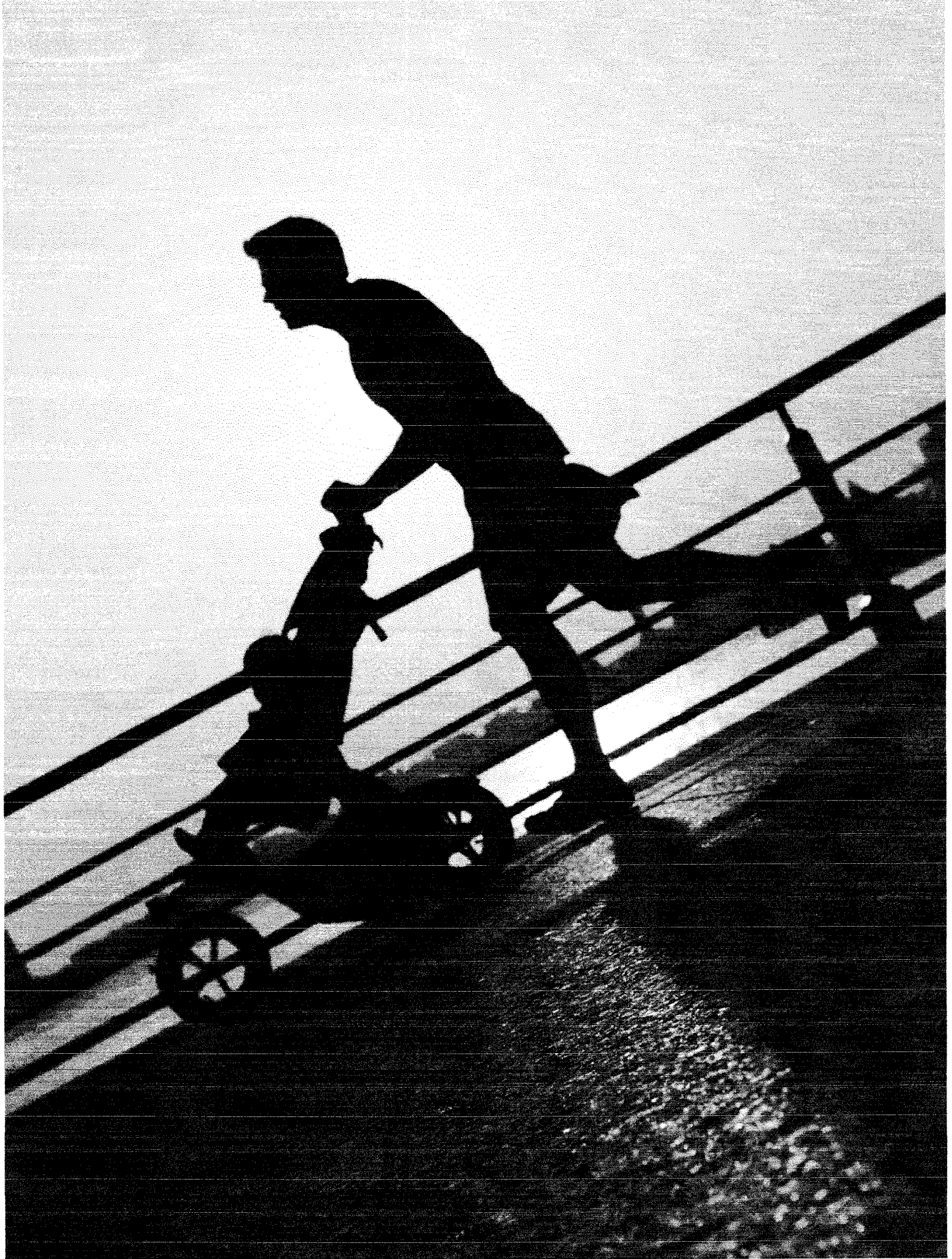
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**Diseases:**  
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**Interventions:**  
The researchers searched for the following terms for public health interventions, modifiable behavioral changes, or biological risk factors: Public Health, Risk Factors, Risk, Life Style, Health Promotion, Exercise, Smoking, Smoking Cessation, Sexual Behavior, Food Services, Fruit, Mass Screening, Breast Feeding, Air Pollution, Community Health Services, School Health Services, Healthy People Programs, Cholesterol, Body Mass Index, Blood Pressure, Prevention.  
**Study Design:**  
The researchers searched for the following epidemiological study design keywords: Program Evaluation, Intervention Studies, Prospective Studies, Case-Control Studies, Longitudinal Studies, Follow-Up Studies, Survival Rate, Hospitalization, Proportional Hazards Models, Incidence, Data Collection, Randomized Controlled Trials as Topic, Time Factors, Regression Analysis, Diet Surveys, Cohort Studies, Outcome Assessment (Health Care), Workplace, Cross-Sectional Studies, Disease Progression, Risk Assessment, Pilot Projects, Effectiveness.  
Terms were searched as both keywords and as Medical Subject Headings (MESH).

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